

# Big Sky Clearwater

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*Published jointly by the Montana Department of Environmental Quality, Montana Water Environment Association, and Montana Section American Water Works Association for the environmental community*

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**SPRING 1997**



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**THE PLANNING, PREVENTION AND ASSISTANCE DIVISION  
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# **In This Issue**

**Working Together *Let's Just Do It!***

***Technical Assistance Contract Award***

**Montana SRF Changes**

**Risk Management Programs**

***5th Annual Spring Water School Agenda***

**MSAWWA Water For People Project and Pledge Sheet**

**EPA O&M Awards**

**63rd Fall Water School *A Success!!***

**Groundwater Under The Direct Influence of Surface Water (GWUDISW) Update**

**News For MWEA Members**

**Northwest Montana Operator Problems**

**What's Up At METC?**

**Surface Water Treatment Monitoring Report Forms**

**New Executive Secretary for MSAWWA/MWEA**

**MWEA Pre-conference Seminar**

**Water: The Treasure State's Greatest Treasure**

**MSAWWA/MWEA Joint Annual Conference**

**1997 Joint Conference Registration Form**

**Exhibit Registration Form**

**MSAWWA President's Invitation**

**MWEA Presidents Message**

**Water and Wastewater Operator Certification News:**

**Certification Examination Notice**

**Math Review For Certification**

**Don't Forget! Examination Reminders**

**WEF Membership Application**

**Periodicals**

**1996 Safety Survey**

**I. General Information**

**II. Self-Audit**

**III. Accident Investigation**

**Reauthorization of the Safe Drinking Water Act**

**Demonstration Dollars Available**

**WEF Officer To Attend Joint Conference**

**Montana Water Environment Association Membership Drive**

**New Correspondence Course From Indiana State University**

**Wastewater Operator Safety Bulletin**

**Water Facility Safety Considerations**

**Wellhead Protection News**

**Wellhead Protection In Montana**

**Public Water Supply Chemical Monitoring Requirements Update**

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## **WORKING TOGETHER**

### ***LET'S JUST DO IT!***

Recently, Montana Rural Water Systems (MRWS) Incorporated, a nonprofit and partially federally funded organization, sent a letter to water system administrators. The letter ostensibly was to express views the MRWS Board of Directors represents as coming from water system administrators. The Public Water Supply Program staff does not know if the views represent a majority of the Montana water system administrators. We do think this letter is an unfair attack on Montana's Public Water Supply Program. We would like to take this opportunity to respond to each of the views raised in the MRWS letter. Please keep in mind that the responsibility of Montana's Public Water Supply Program is to protect public health by implementing laws passed by the legislature. Therefore, our first priority in providing technical assistance is directed toward understanding regulations and how to operate and maintain a water system in a manner that is beneficial to public health and wellbeing. The views expressed by MRWS are directly quoted in italics below. Our responses immediately follow.

***“Water systems once served by the 2 staff members from MRWS under State Contract are not receiving help they are requesting, due to the loss of the MRWS contract.”***

When a previous contract expired the Department of Environmental Quality (DEQ) decided to continue efforts to provide technical assistance via contracted services. It may not be common knowledge that DEQ subsidized two MRWS employees to provide technical assistance to small public water systems from February 1993 through June 1995. However, DEQ was required by state contracting laws to issue a Request for Proposals (RFP) to renew the technical assistance contract. The RFP process resulted in a new contractor to provide technical assistance. DEQ has not turned away any requests for technical assistance provided by that contractor. The above quotation would only be accurate if the requests are being made to MRWS and MRWS is unable to respond and is not forwarding such requests to DEQ. If you should need technical assistance, it can be provided through the new contractor or by DEQ staff (please see the last paragraph).

***“User fees set up in the 1991 Legislature to help provide “Hands on” technical assistance are not being used for this purpose.”***

The fees referred to are service connection fees, approved by the legislature, that are used to augment federal funds to help fund the Montana Public Water Supply Program. These fees have provided funding for several purposes. An employee in the Polson regional office is funded solely by the fees. Contracts with county health departments, for inspections and to follow up on contamination events, have been funded by the fees. Much of the water operator training is subsidized by the fees,

including funding a training specialist at METC through MSU-Northern. Also, as mentioned above, DEQ has funded two technical assistance contracts with fees. The first contract was awarded to MRWS, and after the recent RFP process, a new contractor, South Hills Environmental Consultants, was selected and has been providing technical assistance for several months now (see the related article). Several other contracts are being funded either partially or totally by fees. These include: a contract to conduct sanitary inspections of water systems, a contract to delineate wellhead protection areas, and a contract to assess the potential for direct surface water influence on groundwater sources.

Also, DEQ spending authority for contracts in fiscal years 1996 and 1997 was severely restricted by the 1995 Legislature, thus limiting our ability to provide the same level of technical assistance available under the previous contract with MRWS.

***“MRWS should be entitled to the 2% Technical Assistance funds for the systems under 10,000 population provided for in the newly Reauthorized SDWA.”***

The legislature may direct these funds to specific organizations. If no such designation is made, DEQ may award the funds to private contractors through a request for proposal process.

***“Water systems rates have become astronomical for which we provide no better service than we did 10 years ago.”***

We don't understand the connection between water systems' rates and MRWS's claim that they have failed to provide better service than they did 10 years ago. The 1986 amendments to the Safe Drinking Water Act changed state public water supply programs from technical assistance-oriented programs to programs directed more toward regulation and enforcement. It is estimated that regulatory requirements have increased at least tenfold over the past ten years. However, water suppliers, as well as rural water programs and state regulatory programs, have not seen a tenfold increase in resources. It is no wonder we are all struggling to keep up.

MRWS may be trying to say that rates have become astronomical due to fees, monitoring costs or treatment required by the regulations. The impact of these elements on water systems' rates, and what has been done to try and reduce the impact, bears closer examination. First, the fees created by the legislature are seen, upon analysis, to be relatively minor. These fees range from 17 cents per connection per month for most of the community systems to 70 cents per connection per month for the very small community systems. Second, the monitoring costs have increased for all systems, and this impact is felt the most by the smallest systems. However, we have worked to make these costs as small as possible for all systems through maximum use of monitoring waivers and reduced analysis costs at our state laboratories. The monitoring costs per system would almost certainly have been greater if Montana did not have primacy. Third, the costs for treatment in order to comply with the regulations would still exist, with or without state primacy. State primacy gives Montana the authority to enforce federal regulations. Stated another way: state primacy means our responsibility is to make sure water systems comply with regulations that are intended to protect public health.



Also, compliance with these regulations would be required whether or not Montana had primacy. We have also done our best to provide other services through direct assistance, over the phone or through the mail, at inspections or through our contractors as described above. Many of you have received customized monitoring schedules prepared by our staff. We provide hands-on assistance, whenever possible, through our staff or contractors.

*“Now that we have convinced the Feds [sic] to get off our backs --- is the State going to get off too or do we have to go to battle with them also.”*

We do not know if MRWS is suggesting that DEQ stop implementing the laws passed by the legislature or if it is suggesting that the legislature change the laws. We do know that we have done our best to implement a vast array of new regulations over the past several years. Much of this regulation has not been popular with the regulated community. Nevertheless, DEQ has attempted to be as reasonable and flexible as the law allows. We have not been as heavy-handed as we may have been. We have had our shortcomings and we admit that; however, we have refrained from degrading, publicly or privately, any other organization because their philosophy or mission differs from our own.

MRWS has suggested that you need to write letters. We certainly agree. However, we suggest that you be allowed to formulate your own opinions rather than be told what they are. Also, if you have a need for technical assistance, please let us know. You can contact the Public Water Supply Program by phone at 406-444-4323, or by mail at P.O. Box 200901, Helena, MT 59620-0901. If it is something the Public Water Supply Program has the expertise and ability to do, either through our staff or through our contractors, we will provide the assistance. If it is something that another organization such as MRWS or the Midwest Assistance Program (MAP) has better expertise with or ability to respond to, we will refer you to them or call them for you. The Public Water Supply Program feels that we can all work together to provide safe drinking water for the public. Let's just do it!



# Technical Assistance Contract Award

## *Technical Assistance Available To Public Water Systems*



Dear Public Water System Owners and Operators,

In September 1996, South Hills Environmental Consultants was awarded a contract with the Permitting and Compliance Division of the Department of Environmental Quality. This contract authorizes any representative of South Hills to deliver authorized technical assistance or training to any Public Water System in Montana. All services provided by South Hills have been paid through your Public Drinking Water Fees. These people are water professionals who can be sent to your system by DEQ to assist you.

The representatives of South Hills offer extensive experience and unique expertise in most areas of operation, maintenance, and water quality sampling of public water systems. They share a sincere commitment to ensure the protection of public health through the provision of safe drinking water in Montana.

Please welcome these people and have confidence they are at your system to help you solve any problem you might presently have or have previously experienced with the operation, maintenance, or water sampling of your public water system.

Should you have any questions or need technical assistance, please contact me or anyone at the Permitting and Compliance Division, Public Water Supply Program at 444-4323.

Sincerely,

A handwritten signature in cursive script that reads "Rick Cottingham".

Rick Cottingham

Technical Assistance Contract Officer



# MONTANA SRF CHANGES

by Paul LaVigne, P.E.

Technical & Financial Assistance Bureau

The Montana State Revolving Fund (SRF) Loan Program currently provides low-interest loans for municipal wastewater projects. Approximately \$41 million in SRF loans has been provided to Montana communities since the program's inception in 1989. In 1997, there will be two significant changes to the SRF program.

The current wastewater SRF will be expanded in 1997 to include nonpoint source (NPS) activities. Nonpoint source activities are those activities where pollution is diffuse rather than from a single "point source," such as the end of a pipe. Examples of NPS activities are: stormwater runoff from construction, logging, or mining sites; pollution from fertilization practices; mine drainage; streambank destabilization, and municipal solid waste landfills. Most of the participation in this new SRF category is expected to come from municipalities for funding of landfills. Two important points to consider are that private entities are eligible for SRF funds for NPS activities, and municipal activities are eligible for refinancing with certain restrictions. Assuming the changes to the state law are passed by the legislature, NPS activities should be able to be funded beginning in May or June of this year.

The second major change in the SRF program is the creation of a new Drinking Water SRF (DWSRF) Loan Program. Congress recently passed the amendments to the Federal Safe Drinking Water Act and the establishment of the DWSRF Program was one of the amendments. Montana has been allocated approximately \$14.8 million for the first year. This money must be matched by 20% state money (which is the same as the current wastewater SRF program). The main difference between the WWSRF and the DWSRF is that the DWSRF program has provisions for the states to provide funds to various "non-project" activities or "set-asides." These set-asides include source water protection, source water assessment, capacity development (viability), wellhead protection, operator certification, small system technical assistance, and a loan subsidy program for small, financially disadvantaged communities. It has not been determined at this time to what extent the set-asides will be funded. These set-aside programs may be developed in phases over the next couple years in order to allow the project portion of the program to be implemented as soon as possible. Drinking water projects which were constructed after July 1, 1993, are eligible for refinancing with DWSRF money. The new Montana DWSRF program should be up and running in late summer or fall of 1997. Anyone with potential projects or with any questions should contact Tom Livers (444-6776), Barb Neuwerth (444-5322) or Paul LaVigne (444-5321) at DEQ.



# RISK MANAGEMENT PROGRAMS

(Or, playing the boogeyman game)

by Bill Bahr

For those of you who have raised children, you may remember hearing your child's tiny voice calling out to you in the night, "I think there's a monster in the closet." (Or, under the bed, or something like that.) You probably responded in one of two ways; you might have tried to quiet the fears through reassurances that monsters do not exist, or you might have grabbed a flashlight and peered under the bed or looked into the closet, revealing the absence of gruesome ghouls lurking about. I don't know which approach is more effective, but when it comes to safety programs in the water and wastewater treatment industries, taking a flashlight and poking around to find the bogeyman is extremely important in developing policies and procedures to protect your staff, your plant and your community in the event a real monster shows up.



Recent federal Clean Air Act regulations implemented for municipal facilities through the EPA Risk Management Program will impact publicly owned treatment works (POTWs) in Montana. Systems handling significant amounts of harmful substances will need to develop plans to prevent, detect, and minimize accidental releases of these chemicals. On behalf of the Montana Water Environment Association (MWEA) and the Department of Environmental Quality, I have helped several larger Montana cities conduct Emergency Planning sessions and stage emergency events. The events were staged in order to evaluate community readiness to deal with all the horrible possibilities we could imagine and to develop response plans. Facilities handling hazardous chemicals, most often chlorine, will have to imagine a worst-case scenario. This is sort of like getting a flashlight, looking for the bogeyman waiting to jump out from under the bed, and planning to cope with it.

If your facility handles quantities of hazardous chemicals that exceed the annual threshold quantity, you must comply with the regulation by June 20, 1999. It is advisable, within the scope of any safety program, to do such planning regardless of the EPA requirements and regardless of the size of the facility. Years of experience with water and wastewater systems have shown that danger lurks in virtually all situations. Whether accidents occur because of numbing daily routines, a belief in individual invulnerability, faith in safety equipment, the infallibility of safety programs, or unrecognized unsafe conditions or practices, the key element for remaining uninjured or alive is for each worker to watch closely for those critical instances where all protections can fail and the unthinkable can occur.

Have there been times you narrowly missed injury, no matter how slight, because your personal safety guard was down? Remember the time the hammer and chisel were in the truck or across town in the shop, so you grabbed a wrench and screwdriver to loosen the flange on the packing gland? The critical moment is that instant in time when the wrench is descending to strike the screwdriver, just before a chip from the screwdriver flies up toward your eye or the wrench glances off toward your wrist, and is the instant in time you will wish you could return to as you are taken for medical attention. Whether we call it risk management planning, emergency planning or safety planning, the



process is still the same: imagine that the worst can happen, identify the critical instant when it could happen and put in safeguards on your way back.

**All water and wastewater treatment systems need to undertake risk management planning,** regardless of size, type or amount of chemicals used, or regulatory requirement. You should use EPA guidelines as a road map in your planning process. Those who need to file their plans with authorities will be ready to do so, and the others will, we hope, be better prepared to face the worst. Municipal plants need to file a risk management plan (RMP) if they handle 10,000 lb. of flammable material, or 500 to 20,000 pounds of toxic materials; those most often used in POTWs would be chlorine (2,500 lb.), ammonia (10,000 lb.), or sulfur dioxide (5,000 lb.).

The EPA rule says plants must develop worst-case scenario plans targeted at both employee safety and the preservation of health and the environment of nearby communities. The plans must include accidental release prevention and emergency response policies, information on sources and regulated substances, a 5-year accident history, and any planned safety improvements. The RMPs will be made available to appropriate government agencies such as the State Emergency Response commissioner and the public.

The category under which most municipal facilities will likely fall is listed as program 2 plants. These plants are characterized as simple operations that do not process chemicals. Program 2 facilities must conduct a hazard assessment, implement prevention and emergency response programs, and submit the required documentation to the designated state or federal agency. The hazard assessment must include a 5-year accident history and an analysis of at least one worst-case scenario. Additional worst-case scenarios may be required following review of the RMP.

As you may have noted, many of the regulations are similar to rule requirements under OSHA and the Montana Department of Labor, Safety Bureau. The Worker Right-To-Know Act, or hazard communication program, requires that information, training, and prevention and protection policies be available to all employees for all chemicals they are exposed to in the workplace. Fire safety and emergency planning regulations require plants to develop plans to handle releases and other emergency events that will protect the staff, plant and community. Community Right-To-Know Act regulations require plants to report to local and state officials the types and amounts of hazardous chemicals used, handled or stored at the plants.

The Safety Bureau, 444-6401, can be used as a resource in developing your strategy. Additional information about the rule can be obtained by calling the EPA at (800) 424-9346 or 1-703-412-9810. Please call me at 444-5337 with questions. The water and wastewater operators and managers around the state have always been receptive to implementing safe practices. Maybe it's the common-sense aspects of safety that appeal to you. Joe Liuzza of the Safety Bureau has trained some of you, and he is impressed by your general high level of safety consciousness. Sandra Stapler and Tony Tacke, who help me with the confined space entry training sessions, are eager to work with our industries to make them safe. Please take the time to begin looking for those bogeymen in your plants. Your families and neighbors will thank you for it, and you will be there for work tomorrow, too.

# **5TH ANNUAL SPRING WATER SCHOOL for SMALL SYSTEMS**

*sponsored by the Montana Environmental Training Center*

The 5th Annual Spring Water and Wastewater Operator School for Small Systems will be held in Billings the week of March 12 - 14. It will be held at the Clarion Inn (formerly the Fireside Inn).

This spring school will offer many classes for both the beginning operator and those with experience. We have included the AWWA Teleconference, "Critical Issues in Effective Water Treatment," as part of the agenda. The cost of this teleconference will be included in the school fee. Please notify METC in advance if you plan to attend this conference.

We will again be offering the Basic Track for new operators who are planning on taking the certification exam on Saturday, March 15. Operators will be introduced to scientific terms, math formulas, treatment techniques, and concentration and chemical feed problems. Although this series of classes will help new operators review for the test, it is not designed to provide all of the knowledge needed to obtain a passing grade on the certification exam. New operators are encouraged to study any of the many training course manuals available.

Operators are always encouraged to ask any questions. Department engineers and technical staff will be available throughout the school to answer individual questions.

The Spring School agenda is included here for your review. Please register with METC prior to the school.



# 5th ANNUAL SPRING WATER SCHOOL for SMALL SYSTEMS

sponsored by the Montana Environmental Training Center

## BILLINGS

March 12-14, 1997

Wednesday, March 12, 1997

Time	Basic Training Homesteader	Wastewater  North 40	Water LARGE RANCH	Water SMALL South 40
7:30am	Registration - North 40			
8:30am	Welcome and Introduction - METC (Joint Session/ALL OPERATORS) North 40			
8:45am	- 8:45 - 9:30 Operator Certification and Rule Changes- Shirley Quick/DEQ			0.2 CEC
9:30am	- 9:30-10:30 Cross Connections - Marc Golz/DEQ			
10:30am BREAK				
10:45am	New Operator Certification Shirley Quick Scientific Terms Cavin Noddings/DEQ	Wastewater Treatment in Montana Bill Bahr/DEQ 0.125 CEC	1996 SDWA Reauthorization Jim Melstad/DEQ 10:45 - 11:30 (RANCH) 0.075 CEC	
11:15pm			Compliance Monitoring Schedules Terry Campbell/DEQ 11:30 - 12:00 0.05 CEC	
12:00pm LUNCH (on your own)				
1:00pm	Math Formulas Barb Coffman METC  Water Math Geometry Barb Coffman METC	Lagoon Design Todd Teegarden/DEQ 1:00 - 1:45 0.075 CEC	Source Water Chemistry Terry Campbell/DEQ 1:00 - 1:45 (RANCH) 0.075 CEC	
2:00pm		Lagoon Treatment Doris Roberts/ MSU-Northern 1:45-2:30 0.075 CEC	Bacteriological Sampling Rick Cottingham/DEQ 1:45 - 2:30 0.075 CEC	
2:30pm		Pumps & Motors (NORTH 40) Charles Engel/Familian Northwest 2:30 - 5:00 0.25 CEC		
3:15 BREAK				
3:30pm	Hydraulics Marc Golz DEQ	Pumps & Motors Continued		

# 5th ANNUAL SPRING WATER SCHOOL

## for SMALL SYSTEMS

Thursday, March 13, 1997

Time	Basic Training Homesteader	Wastewater North 40	Water LARGE Ranch	Water SMALL South 40
8:00am	<b>Lagoon Systems</b> <i>Bill Bahr/DEQ</i>	<b>Lagoon Trouble Shooting</b> <i>Doris Roberts</i>	<b>Particle Counting</b> <i>City of Billings</i>	<b>Chlorine Residual Monitoring</b> <i>Rick Cottingham</i>
9:00am	<b>&amp;</b> <i>Doris Roberts/MSU-Northern</i>	0.1 CEC <b>Permits and Discharge Options</b> <i>Bill Bahr &amp; Todd Teegarden/DEQ</i> 0.05 CEC	0.15 CEC	8:00-8:20 0.05 CEC <b>System Disinfection Wells, Tanks, &amp; Mains</b> 8:20-9:30 <i>Terry Campbell/DEQ</i> 0.1 CEC

9:30am BREAK

9:45am	<b>Lagoon Systems</b> <i>Bill Bahr &amp; Doris Roberts</i>	<b>Collection System Operation, Maintenance, &amp; Recordkeeping</b> <i>Scott Emerick/City of Billings</i>	AWWA Satellite Teleconference: "Critical Issues in Effective Water Treatment" 10:00am-1:30pm (0.35 CEC)	<b>Well Construction</b> <i>Joe Meek/DEQ</i> 9:45-10:45 0.1 CEC
11:00am	<b>Mechanical Systems</b> <i>Bill Bahr</i>	0.225 CEC		<b>Ground Water Protection</b> <i>Joe Meek/DEQ</i> 10:45-12:00noon 0.125 CEC

12:00pm LUNCH (on your own)

1:00pm	<b>Concentration &amp; Chemical Feed Problems</b> <i>Cavin</i>	<b>Basic Chemistry</b> <i>Bill Bahr &amp; Barb Coffman</i> 0.1 CEC	<b>Tank Inspections &amp; Cleaning</b> <i>Wayne Dykstra/Liquid Engineering (Ranch)</i>	0.175 CEC
2:00pm	<i>Noddings/DEQ</i>	<b>DO &amp; pH Meters</b> <i>Bahr &amp; Roberts</i> 0.075 CEC		

2:45pm BREAK

3:00pm	<b>Water Math Hydraulics and Loading Rates</b> <i>Jerry Burns/DEQ</i>	<b>Perform. Tests</b> <i>John Standish/Energy Labs</i> 0.1 CEC	<b>Distribution Operation &amp; Maintenance</b> <i>Scott Emerick/City of Billings</i> 3:00 - 4:00 (Ranch) 0.1 CEC
4:00pm		<b>Microscopic Lab</b> <i>Bahr &amp; Coffman</i> 0.1 CEC	<b>Video of Distribution Systems &amp; Wells</b> <i>Patty Townsend/Pace Constr.</i> 4:00 - 5:00 0.1 CEC



**5th ANNUAL SPRING WATER SCHOOL  
for SMALL SYSTEMS  
Friday, March 14, 1997**

Time	Basic Training	Wastewater	Water LARGE	Water SMALL
8:00am	<div><div><div><b>Billings Wastewater Plant Tour</b> <i>City of Billings</i> 8:00 - 10:00 0.2 CEC</div><div>OR</div><div><b>Billings Water Plant Tour</b> <i>City of Billings</i> 8:00 - 10:00 0.2 CEC</div></div><div>OR</div><div><b>Knowing Your Watershed</b> (North 40) <i>Jan Boyle/METC &amp; Rob Foster/DEQ</i> 8:00 - 10:00 0.2 CEC</div></div>			
10:00am	BREAK			
10:15am	<div><div><b>General Safety Orientation and Planning</b> (North 40) <b>(Joint Session - ALL OPERATORS)</b> <i>Gary Workman/City of Billings</i></div><div>0.125 CEC</div></div>			
11:30am	<div><div><b>Wrap-up and Adjourn</b></div><div>0.05 CEC</div></div>			
12:00pm				

**REMINDER:** A Math Review session will be offered on Friday afternoon from **1:30 - 4:30 PM**. No CECs will be given for this session. Examinations will be given on Saturday, March 15th, 9:00 AM - 1:00 PM. Room locations will be announced during Wrap-up.

**METC Thanks You All for Your Attendance and Attention!!**

# MSAWWA Water for People Project

In 1992, the Montana Section of the American Water Works Association (MSAWWA) formed the Water for People (WFP) Committee to help provide safe drinking water in developing countries. John Campbell of Polson is the committee chairperson. Since September 1995, the MSAWWA WFP Committee has been actively involved in funding a water system circuit rider project in Honduras.

The project resulted from a 1993 visit to Honduras made by MSAWWA members Mike Schwartz and Jim Melstad. Several conclusions were drawn from this visit. First, it appeared that significant funding for the construction of water systems was already being provided through larger AWWA sections and international organizations. Second, most systems had serious problems that resulted from a lack of operation and maintenance. Finally, it would be logistically very difficult and expensive for MSAWWA to provide direct "hands-on" technical assistance to water suppliers in Honduras.

After discussing alternatives, the MSAWWA WFP Committee decided to fund a circuit rider position in Honduras to provide direct, continuing assistance to water suppliers. So far, MSAWWA and the national AWWA WFP organization have each contributed \$3720 to purchase a motorcycle and fund the salary for one year for a circuit rider. In order to meet the continuing obligation to pay one-half of the circuit rider's salary, MSAWWA must raise \$2220 annually.

Now that we have a successful project underway, we are requesting assistance from Montana water industry professionals in providing funding for the next two years. If you are able to provide assistance to this important project, please return the following pledge sheet with your donation. If you wish to make a two-year donation, but would rather not send the entire amount at this time, we can send reminder notices for the second year. Your commitment will be greatly appreciated and will be recognized in the AWWA newsletter Newswaves.

Please call if we can answer any questions, and thank you for your help.

John Campbell  
883-2661(h)  
883-8217(w)

Jim Melstad  
443-4339(h)  
444-5315(w)

Rick Cottingham  
443-4525(h)  
444-4019(w)

John Camden  
443-5034(h)  
444-4769(w)



# MSAWWA WFP PLEDGE SHEET

**Donation amount (check one):**

\_\_\_ \$ 250/yr. for 2 years - PLATINUM MEMBERSHIP

\_\_\_ \$ 100/yr. for 2 years - GOLD MEMBERSHIP

\_\_\_ \$ 50/yr. for 2 years - SILVER MEMBERSHIP

\_\_\_ \$ \_\_\_/yr. for 2 years

\_\_\_ \$ \_\_\_\_\_ one-time donation

**Payment method (check as appropriate):**

\_\_\_ Payment enclosed for \_\_\_ year(s)

\_\_\_ Please bill me for the second year

\_\_\_ Payment enclosed for a one-time donation

**Mailing address:**

\_\_\_\_\_  
individual or company name

\_\_\_\_\_  
street or PO address

\_\_\_\_\_  
city/state/zip

**Please make checks payable to MSAWWA WFP Fund and mail to:**

MSAWWA WFP Fund  
c/o John Campbell  
105 Sixth Ave. West  
Polson, MT 59860

**THANK YOU!!!!**

**WFP is a registered 501(c) nonprofit organization. All donations are tax deductible.**

# EPA O&M AWARDS

Once again it's time to get some recognition for the hard work the operators and communities put into their wastewater treatment systems. The deadline is in early April, so now is the time to begin working on your application. Joanie Emrick, Kalispell wastewater treatment plant manager, says it takes a "little more" than the eight hours suggested in the EPA application packet to complete the task. I suppose that it also depends on the quality of the application you want to submit. Apparently we have some perfectionists in Montana, because we have been very successful in receiving these EPA Excellence in Operations & Maintenance awards, both regionally and nationally.

I encourage those systems I have approached the past couple years to grab the guidelines for the previous years and get to work. I honestly feel you have the right to receive an award for your excellent work, and I want to help you get what you deserve. These awards also promote the idea that our efforts in our treatment systems ought to be to achieve the very best we can and to serve as models for other systems to follow. Gaining recognition for your continued efforts and for the ingenuity displayed in making your plants better will help all Montana communities, not to mention the positive effects on Montana waters. Call Bill Bahr at (406) 444-5337.

Recent winners are:

Lolo, David Haverfield, manager, Small Secondary  
1996 EPA Region VIII 1st Place  
1996 EPA National 1st Place

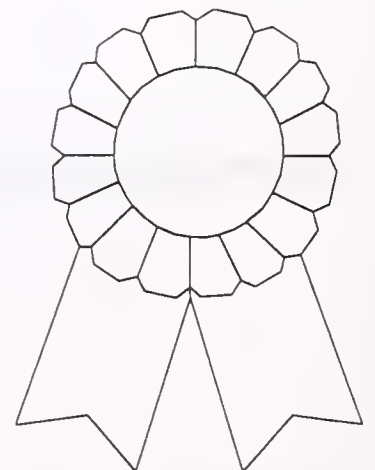
Kalispell, Joanne Emrick, manager, Advanced Secondary  
1996 EPA Region VIII 1st Place

Lakeside, Butch Forsyth, manager, Non-Discharging Small Secondary  
1995 EPA Region VIII 1st Place  
1995 EPA National 2nd Place

Billings, Dale Rongholt, manager, Large Secondary  
1995 EPA Region VIII 2nd Place

Chinook, Marlene Doney, superintendent, Small Secondary  
1993 EPA Region VIII 1st Place  
1993 EPA National 1st Place

Great Falls, Wayne Robbins, manager, Medium Secondary  
1991 EPA Region VIII 1st Place  
1991 EPA National 1st Place





# **63RD FALL WATER SCHOOL**

## ***A SUCCESS!!***

**By**  
**Barb Coffman, METC Training Specialist**

An estimated 140 water and wastewater operators, managers, and administrators attended the 63rd Annual Fall Water School for Water and Wastewater Operators held on the MSU-Bozeman campus, September 23-26, 1996.

The basic track designed for those taking exams was very popular, which was attested to by the fact that 101 people took 120 exams on Friday following the school.

Highlights of concurrent sessions in water and wastewater included Biofilms by Dr. William Costerton, Algae Identification by Dr. Loren Bahls, Cryptosporidium by Bob Clement, Confined Space Entry by Sandra Stapler, Chlorine Systems by Don Shipp, Lagoons by Doris Roberts, Ground Water Basics by Joe Meek, Water Conservation by Gretchen Rupp, Lightning Surge Protection by Mike O'Neill, and Cross Connections by Marc Golz. Tours of the Bozeman and Belgrade water and wastewater facilities added hands-on in-plant experience and gave operators the chance to exchange ideas and information with each other.

The evening vendor show on Monday night brought about much discussion between attendees and participating vendors.

U.S. Senator Max Baucus' address to the fall school included discussion on the newly passed 1996 Amendments to the Safe Drinking Water Act.

Montana Department of Environmental Quality Division Administrators Jan Sensibaugh, Van Jamison, and John Arrigo presented the "The New DEQ." Each one discussed their respective divisions of Permitting; Planning, Prevention and Assistance, and Enforcement and how these divisions will function.

Anyone who has suggestions for topics for the 64th Fall School, please contact Jan Boyle or Barb Coffman at METC at (406)454-2728. We would greatly appreciate any and all suggestions.

# GROUNDWATER UNDER THE DIRECT INFLUENCE OF SURFACE WATER (GWUDISW) PROGRAM UPDATE

To refresh your memories, the GWUDISW program is required by the federal government in the Safe Drinking Water Act of 1986. All states must determine which groundwater sources are affected by surface water. Groundwater sources include all wells, springs and infiltration galleries in a public water system inventory. Typical examples of sources that may be influenced by surface water are: a shallow well near a stream or lake; a shallow well without a proper grout seal or a watertight sanitary seal; any spring with a nearby surface water source, and all infiltration galleries. Other sources may also be at risk, but these are the more typical examples.

The DEQ is working with the Montana Bureau of Mines and Geology (MBMG) to help classify sources across the state. This winter and next spring, representatives of DEQ or MBMG will be contacting and visiting operators of all known springs and infiltration galleries in the state. If your system has a spring or infiltration gallery in its inventory, and the DEQ or MBMG does not contact you within the next few months, please contact Eric Regensburger with the DEQ at 444-3639 to set up a site visit. The site visits are to collect information on the spring sources by looking at the spring and talking with the operator. This information will determine if additional work needs to be conducted at the spring. Infiltration galleries are designed to use surface water; therefore, they will automatically be required to conduct additional work. The DEQ/MBMG representatives will also visit operators of infiltration galleries to discuss their options under the GWUDISW program.

At the same time, DEQ is conducting preliminary assessments on all groundwater wells in the state, but we need the help of operators and owners. If you have not already sent information to the DEQ or MBMG specifically for the GWUDISW program, please do so. The following information will be appreciated and allow the DEQ to complete the preliminary assessment on your well(s):

- 1) *Driller's well log (contrary to popular belief, the DEQ does not have well logs for most of the public water supply wells in the state).*
- 2) *If no well log is available, other information that will be helpful is: the depth to water in the well during static (non-pumping) conditions and the depth to the top of the well screen or bottom of casing if well screen was not used. This information needs to be measured by the operator, owner or an agent of either; rough estimates or hearsay are not accurate enough for the preliminary assessment.*
- 3) *A map showing the location of the wells in relation to nearby surface waters. If a map is not available, a better method is to actually measure the distance from the well to the closest surface water source. Rough estimates or hearsay are not accurate enough for the preliminary assessment.*

If you have any questions, please contact Eric Regensburger with the DEQ at 444-3639.



# NEWS FOR MWEA MEMBERS

FROM BILL BAHR, DIRECTOR



## REGIONAL MEETING IN WHITEFISH

One of the most exciting events scheduled for this year, besides our annual joint conference in West Yellowstone, is the upcoming regional WEF meeting in Whitefish that Montana is hosting this spring. These meetings bring together officers and directors from Member Associations (MAs) throughout the western region of the United States and Canada. Last year in Victoria, British Columbia, the director from the Philippines attended, expanding the reach of this western regional meeting to international MAs.

The Montana Water Environment Association (MWEA) will be represented by yours truly, serving as national director for MWEA to the WEF Board of Directors; our president, Paul Montgomery, and the MWEA Professional Wastewater Operators Division (PWOD) director, Starr Sullivan. We expect to have other officers attend as well to help provide a big Montana welcome to the visitors from the other MAs. WEF business is scheduled for the meetings on Friday, May 30, and the MA Exchange, where information is shared between the MAs in attendance, is scheduled for Saturday, May 31.

These meetings allow WEF business to proceed throughout the year and allow for better input by each MA to the governing officers of WEF. Sometimes it is difficult to make a difference at the national conference when the entire Board of Directors is in session. These smaller regional meetings allow more work to get done on a variety of topics. We have reviewed WEF governance, last year's dues increase, WEF operations and budgets, MA concerns, and other issues at previous regional meetings.

Perhaps the best overall portion of the meeting is the chance to share ideas with other MAs during the MA Exchange sessions. PWOD representatives also take time to work on issues of concern to the PWOD members during these meetings. These exchanges take the form of informational presentations by each MA, followed by comments and questions. I have learned a great deal about MA activities that can be (and have been) used in Montana to make our conference and our MA better. The Whitefish location should be a popular destination for the other MA leaders; I have fielded quite a few calls about how to get to Whitefish for the meeting. I anticipate a good turnout.

## SUPPORT MWEA BY ATTENDING THE ANNUAL CONFERENCE

MWEA is a volunteer association with lofty goals intended to prevent water pollution and educate its members and the public about ways to accomplish this. Financial support for our activities, like public education, safety education, research support, water quality policy development and others, comes primarily from income from the annual conference. We have conducted financing seminars and emergency planning events throughout the years, but the annual conference remains the critical event we plan each year to promote the MWEA.

I encourage all members of both the Montana Section of the American Water Works Association (MSAWWA) and the MWEA to plan to attend the conference in West Yellowstone, May 7-9, 1997. There will be pre-conference activities, the technical program, discussions by professionals about the Yellowstone region, entertainment, social opportunities and many other events scheduled during the conference, so plan to be there! This is also an opportunity for each member to get involved with the associations and ensure that they will be around for a long time to continue the quest for better water quality in Montana and the region, and for improved drinking water. Please sign up for one of the various committees involved with education, planning the conference, safety, government affairs, or others. There is a lot of work to be done; your help is needed.

## **THE WEF CONVENTION IN DALLAS**

The national conference was bigger than ever. I had so many meetings to attend that I missed some of the presentations I intended to see. The exhibitor show was the biggest ever. Until you lay eyes on this event, you cannot imagine the size and variety of the exhibits that are part of this conference. The number of presentations is also unimaginable. WEF uses credit cards to track the sessions you attend. Part of your registration includes a card that you insert into readers which register each time you enter or leave a technical session. You are credited with CECs that you can use to maintain operator or engineering certification. I think there were a dozen sessions going at a time throughout the five days of the conference.

Some of the research is very advanced and far beyond the scope of application here in Montana. However, I have always managed to find some work that is directly applicable to Montana plants and situations. Watch for my next column. I am trying to apply some new concepts at some plants here in Montana to see if we can improve wastewater treatment plant discharges to certain water bodies.

Along with all the meetings, social functions, technical sessions, award ceremonies and exhibitor displays, I probably enjoy the Operator Challenge (OpsChallenge) the most. It has been my wish to see a Montana team compete at the national WEF conference. Starr Sullivan has come up with several ideas on how to make this a reality. Over the next three years of his term, I hope to find a way to select and train a team and get the financial support to send them to the conference. Please contact Starr or me with ideas or support for a Montana OpsChallenge team.

Well, until we meet again at the annual conference in West Yellowstone, adios.





# NORTHWEST MONTANA OPERATOR PROBLEMS

By

**Mike Hagel, Water Quality Specialist**

**December 31, 1996**

A person I was visiting mentioned how she'd been physically measuring snowfall this winter (1996-97) in the Polson/South Flathead Lake area. This person had measured 60 inches of snow since November, which didn't take into account, after the fact, that we received an extra two feet of snow since she and I had spoken. When a person thinks of the water content of snow plus the rapid melting we've had in the past several years due to mild Chinooks, a rocket scientist is not required to calculate the odds that severe runoff may again befall us sometime this year.

Groundwater is utilized and consumed almost exclusively in the northwest mountainous area of Montana. There is the occasional community system using surface water that has either constructed a surface water treatment plant or will be constructing a plant in the near future. The remainder of the population blessed with living in northwest Montana impart their trust to the operator who has custody of the groundwater system.

When the runoff water from winter's snow starts rolling, tumbling, and cascading down every draw between the Mission Mountains and the Marias Pass, when the rivers are flowing at maximum capacity and the reservoirs are brimming and the fishing is terrible, this is one of the more serious times when bacteriological water samples submitted from groundwater wells are most critical.

For a number of years, I was under the impression that coliform positive bacteriological samples were the fault of the operator who was more interested in riding the rapids or trekking into the only private, special, quiet location remaining for a peaceful day of fishing. Ah, finally a few hours away from the frenzied job and the incessant, onrushing, murky water hastening its way elsewhere.

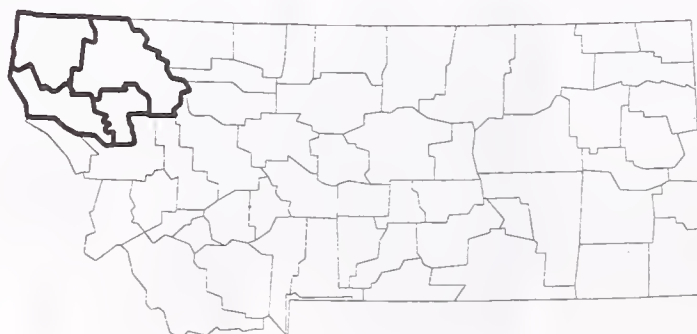
Many of the groundwater wells constructed in northwest Montana were accomplished in excess of 30 years ago. A few of the groundwater wells were fabricated in the early 1940s. Difficulties with contamination arise when surface water runoff enters into and blends with a groundwater supply in a number of ways. Some of the ways are described below:

1. There may be a hole or a split in the weld or pipe casing, allowing surface water to blend with the groundwater.
2. The sanitary seal could be fallible, allowing rain or snowmelt to infiltrate the inside of the pipe casing.
3. The outside area around the well casing that is presumed to be concreted or filled with bentonite, creating an impermeable barrier, may have been violated and is leaking surface water runoff to the groundwater.

4. The casing vent, at some point in time, may have been disjoined near the surface of the sanitary seal, or the seal plug was removed with the intent to install of a vent pipe.
5. The sanitary rubber seal may have lost its elasticity and shrunk, granting entry to components detrimental to the groundwater.
6. The pitless adapter or piping, installed below the frost line, may have a perforation that allows surface water to infiltrate when the submersible pump shuts off and pressure is diminished.
7. The well casing must be 18 inches above the maximum flood level. I've seen pipe casings poked in holes below ground level that fill with water during runoff periods. Don't overlook the fact that every time the pump begins discharging, a vacuum is created inside the casing, especially when a vent is not installed. Therefore, surface water is drawn down the inside of the pipe casing into the groundwater via either the electrical supply cord or a leaking sanitary seal.
8. The well may be drawing groundwater that is under the direct influence of surface water.

There are endless probabilities of bacteriological contamination in a water system. The water operator, who can relate significantly better than anyone else to his or her water system, needs to drop other duties for a period of time and thoroughly explore the endless possibilities. The contamination problem will likely remain and keep turning up even when a solution such as chlorine disinfection is agreed upon. If the operator remains consistent in the quest, he or she will likely reveal why the water system is contaminated and displaying coliform positive samples.

No, guys and gals, it isn't the fault of the laboratory for your coliform positive samples. Placing the blame on the laboratory is a very old song and dance routine that is becoming quite overused. In actuality, I haven't yet established that even one bacteriological water sample was intentionally contaminated by either laboratory personnel or equipment that was not sterilized. If your bad samples are few and far between, it may be the operator who adhered his or her thumb to the lid of the bacteriological container while taking the sample.





# What's Up at METC?

by Jan Boyle, METC Training Coordinator



Reflecting on the past six years that I've spent in this position, there is a wonderful sense of being part of a growing movement of folks who are becoming more involved with and more informed about water quality issues. There is commitment on their part to finding solutions to water-related problems in their communities. There also seems to be a trend emerging that suggests these folks are interested in building vital connections between safe drinking water and a clean environment. We all desire a healthy place to live, work, and play. Operators, managers, and administrators of water and wastewater systems are not only professionals entrusted to provide safe drinking water in their communities, but as citizens they truly have a stake in their community's sustainability. Active involvement, cooperation, knowledge, and ideas are the keys that open doors to economic prosperity **and** environmental well-being in every community. The Montana Environmental Training Center (METC) is pleased to have played a role in this development, offering entry-level and advanced water and wastewater training programs, as well as providing educational opportunities to gain awareness about the place where we all live - our watershed.

## *METC Registration and Workshop Cancellation Policies*

Our goal at METC is to deliver quality workshops with instructors whose expertise creates a quality learning experience for those in attendance. At the same time, we've managed to keep workshop fees at an affordable level. We will always strive for these goals. However, METC must also consider efficiency in the delivery of these workshops. There are costs related to designing and delivering these training sessions:

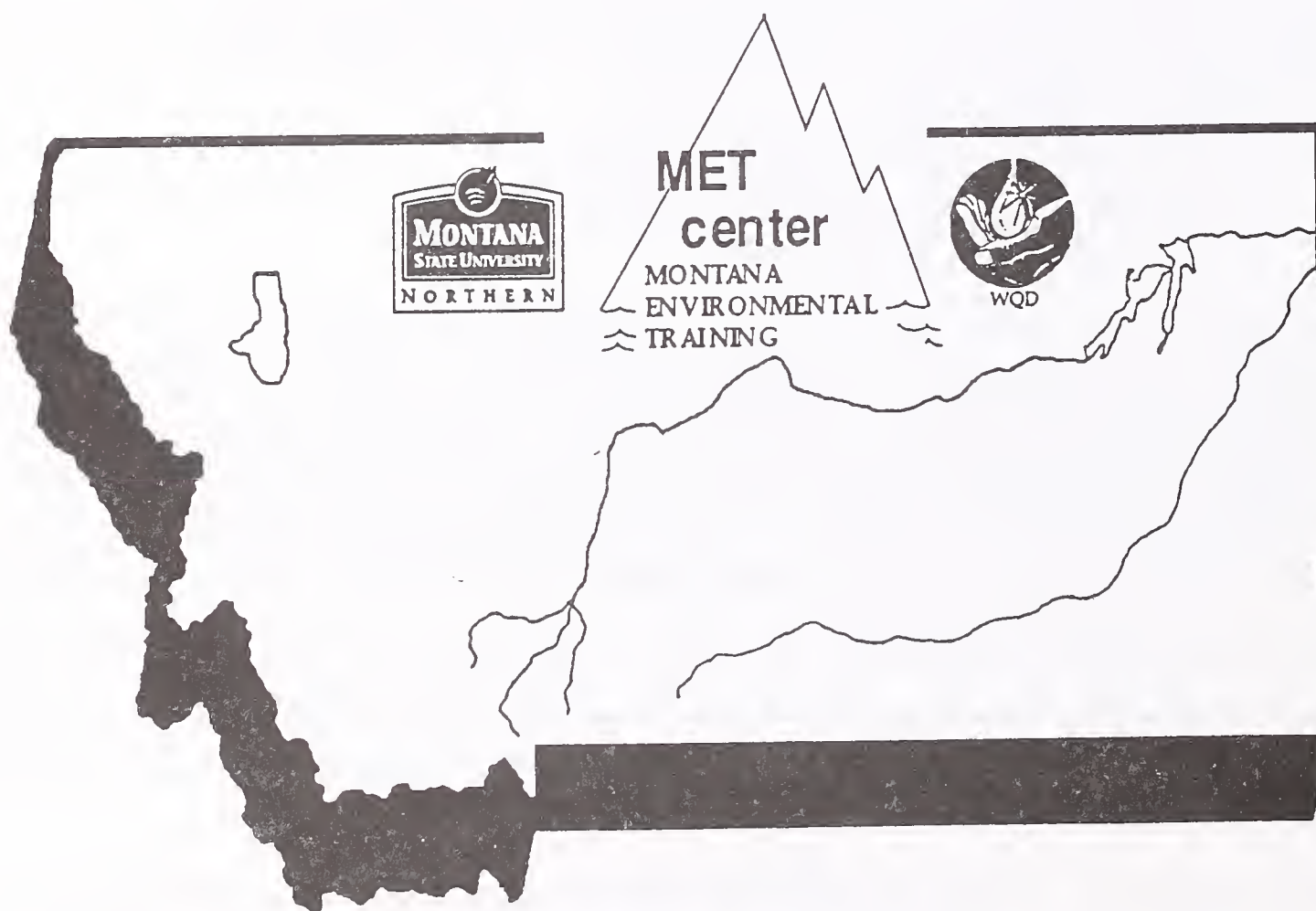
- > cost of the meeting facility and refreshments
- > cost of the instructor and/or his or her travel time
- > cost of printing brochures, handout materials
- > costs related to operating the METC van

These costs and the fees charged per workshop participant should at least project a break-even scenario. When only three are in attendance at a workshop, it becomes quite inefficient to operate in this manner on a consistent basis. In order for METC to best serve those interested in attending METC workshops and seminars, we are encouraging **ADVANCED REGISTRATION** for workshops (even if you are just "thinking" about attending). You can do this by calling METC to register for a workshop, or by mailing or faxing us a completed registration form. These forms are located on each **quarterly training announcement** that is mailed to all certified water and wastewater operators and those on METC's general mailing list. Call METC to request a training announcement if you have not received one. They will be mailed out 4 times a year, and they will include a reproducible registration form, workshop agendas, speakers, registration fees, and dates and locations of upcoming workshops. Please take some time to review the **GENERAL INFORMATION** section of each quarterly announcement.

Related to advanced registration is METC's workshop **cancellation policy**. As hard as we try to avoid it, circumstances arise requiring METC to consider the cancellation of a workshop. These circumstances include the number of folks who have registered in advance; travel time and costs of

the speaker and METC staff; weather and unforeseen circumstances (e.g., ill health). Advanced registration allows us to assess the interest level in a particular workshop. For example, if only three folks are registered for a workshop a week before it is to be delivered, then METC must consider the cost-effectiveness of conducting it with so few in attendance. METC will also look at the potential of rescheduling the workshop for a later time. Therefore, a policy for canceling workshops was developed and reflects a reasonable approach to this matter. **Unless ten (10) or more have completed advanced registration for any METC workshop, METC must consider cancellation.** Advanced registration provides us with information (phone number, FAX number or address) to contact you in case of cancellation. Those who have pre-paid for a canceled workshop will be able to transfer the fee to another workshop or send a substitute should the original registrant be unable to attend another, or receive a refund.

It is important for each interested person to pre-register for a METC workshop even if you are not sure you will attend. The information you provide us in advance allows us to contact you well in advance of a canceled workshop. You can be assured METC will try its best to avoid any inconvenience to you, but we do need your involvement and cooperation. Call METC at (406) 454-2728 with any concerns or comments concerning these policies. Your input is welcome!





# SURFACE WATER TREATMENT MONITORING REPORT FORMS

By  
**John Camden - DEQ**  
**Public Water Supply Program**

It has been more than three years now that the Surface Water Treatment Rule (SWTR) has been in effect. I have talked with most of you about reporting problems on the monthly report forms, and the managers and operators are doing an outstanding job with the monitoring reports. Within the state, we have the cities of Billings, Butte, Colstrip, Fort Peck, Glasgow, Great Falls, Harlem, Havre, and Helena providing computerized reports. Any changes to the State Report must be approved by the Public Water Supply Program. If you have any suggestions for improving the report forms, please let me know.

There are still a few problems in completing the reports that I will discuss. The problems noted are Form F-1, not completing the compliance percent at the bottom right corner; Form F-2, not completing the compliance percentage for each filter and validation/calibration of your turbidimeter; and Form F-4, distribution chlorine residual check must be done daily even if the plant doesn't operate; item #5 at the bottom left-hand corner must be completed where "c" is the total number of sites where disinfection residual not detected and where "a" is the total number of sites where disinfectant residual was measured.

The program will continue to supply filtration plants with a years supply of forms in June. If you need additional forms, please let us know. Best wishes for 1997!



## **NEW EXECUTIVE SECRETARY FOR MSAWWA / MWEA**

Allen and Associates of Helena who so capably provided executive secretary services for the associations for the past several years, has chosen to not continue in this capacity because of additional work commitments during the 1997 legislative session.

In November 1996, the joint board of directors entered into a contract with NorthWood Enterprises of Great Falls to provide executive secretary services to the associations.

Please update your files with this new information.

MSAWWA/MWEA  
c/o Sandy Courtnage  
NorthWood Enterprises  
538 McIver Road  
Great Falls, MT 59404  
(406)771-7978 or FAX: (406)771-1889 or E-Mail: [spotlight@mcn.net](mailto:spotlight@mcn.net)

On behalf of the entire MSAWWA/MWEA organizations, the Executive Board would like to thank Allen and Associates for its most able work and friendship over the past several years.

### **MWEA PRECONFERENCE SEMINAR \*\* SOLIDS HANDLING \*\***

**HAVE YOUR WATER OR WASTEWATER SOLIDS GOT YOU DOWN?  
ALL BUILT UP AND NO PLACE TO GO?**

This seminar will be held to provide operational and engineering information on solids handling systems, new technologies, and systems that work in Montana. While the focus will be on wastewater biosolids, discussion will also include the handling of water treatment plant sludges. A group of experts will be assembled to provide training for designer, operators and community officials. This day-long seminar will be held prior to the MWEA-MSAWWA annual conference. **Further information will be forthcoming!**



# *Water: The Treasure State's Greatest Treasure*

Make your plans & mark your calendar  
Travel to the Gateway of Yellowstone National Park and join the  
Montana Section American Water Works Association (MSAWWA)  
&  
Montana Water Environment Association (MWEA)  
at their  
**Joint Annual Conference**  
May 7 - 9, 1997



*photo by Gus Wolfe*

**West Yellowstone Conference Hotel**  
West Yellowstone, Montana

There will be speakers, continuing education opportunities, exhibitors, entertainment,  
and a chance to visit with old friends and make new ones.

Registration packets will be mailed.

If you don't receive conference materials, please contact:

MSAWWA/MWEA  
c/o NorthWood Enterprises  
538 McIver Road . Great Falls, MT 59404  
phone 406.771.7978 fax 406.771.1889

# 1997 ANNUAL CONFERENCE

MSAWWA & MWEA

## "WATER: THE TREASURE STATE'S GREATEST TREASURE"

May 7-9, 1997

WEST YELLOWSTONE CONFERENCE HOTEL, WEST YELLOWSTONE, MT

### REGISTRATION

Admission to all meetings will be by registration badge only. Make sure you register so you can attend all meetings.

#### PRECONFERENCE SEMINAR - May 7

STBA ☐

##### Solids Management

8:00 A.M. - 9:00 A.M. Registration & coffee  
9:00 A.M. - 12:00 P.M. Session presentations  
12:00 P.M. - 1:00 P.M. Lunch (on your own)  
1:00 P.M. - 4:30 P.M. Session presentations

#### CONFERENCE - May 7 - 9

Wed. 4:00 P.M. - 6:00 P.M. Registration  
Split Board Meetings  
Sponsored Ice Breaker  
Thurs. 6:00 P.M. - 8:00 P.M. Registration  
7:00 A.M. - 8:30 A.M. Joint Board Meeting  
7:00 A.M. - 8:30 A.M. Session presentations  
8:30 A.M. - 4:30 P.M. Vendors' Hospitality Event  
4:30 P.M. - 7:00 P.M. Banquet & Entertainment  
7:00 P.M.  
Fri. 7:00 A.M. - 8:00 A.M. Registration & Cont. Breakfast  
8:00 A.M. - 11:00 A.M. Session presentation  
11:00 A.M. - 12:00 P.M. Vendor Displays  
12:00 P.M. - 1:30 P.M. Lunch  
1:30 P.M. Joint Business Meeting

Member, General Registration: Member # \_\_\_\_\_ \$100 ☐

*Includes two luncheons, banquet and entertainment*

Non-Member General Registration \$110 ☐

*Includes two luncheons, banquet and entertainment*

Spouse's Registration \$30 ☐

— Will attend all functions

— Will attend banquet only — Will attend luncheons only

Life Member Registration \$60 ☐

*Includes 2 luncheons, banquet and entertainment*

#### ONE DAY REGISTRATION:

Member # \_\_\_\_\_ \$70 ☐

Non-Member \$80 ☐

*Includes one luncheon*

Student Rate \$25 ☐

*Does not include meals*

#### Additional Luncheon Tickets

Please indicate number \_\_\_\_\_ @ \$15 = \$ \_\_\_\_\_ ☐

Thursday \_\_\_\_\_ Friday \_\_\_\_\_

#### Additional Banquet Tickets:

*Includes banquet and entertainment*

Please indicate number: \_\_\_\_\_ @ \$30 = \$ \_\_\_\_\_ ☐

PLEASE CHECK AMOUNTS INCLUDED

TOTAL AMOUNT OF CHECK FORWARDED: \$ \_\_\_\_\_ ☐

BILL ME: \$ \_\_\_\_\_ ☐

*If you have guests, please register them and obtain tickets.*

#### CONTINUING EDUCATION CREDIT

Continuing education credits are offered for attendance at the conference. See envelope in registration packet.

.60 CEC's PreConference; .80 CEC's Conference

Non-Members joining now, please enclose completed membership application and one year's dues; then register as a member.

All Registrations Postmarked by April 4, 1997,

will be eligible for an

Early Bird Grand Prize Drawing

To assist with catering arrangements, please check if you know you will not be attending the

\_\_\_ Banquet \_\_\_ Thursday Luncheon \_\_\_ Friday Luncheon

\_\_\_ Check if interested in playing golf  
Wednesday afternoon, May 7, 1997  
(interest and schedule permitting)

PLEASE Make Check Payable To:  
MSAWWA/MWEA and mail it  
with the registration form to:

MSAWWA & MWEA ANNUAL CONFERENCE  
c/o NorthWood Enterprises  
538 McIVER Road  
GREAT FALLS, MT 59404  
406.771.7978 FAX 406.771.1889

NAME \_\_\_\_\_  
(Last) (First) (Initial)

Title \_\_\_\_\_

Organization \_\_\_\_\_

Mailing Address \_\_\_\_\_

(City) (State) (Zip Code)

PHONE \_\_\_\_\_ FAX \_\_\_\_\_

Spouse/Guest Name (if attending) \_\_\_\_\_



# MSAWWA / MWEA ANNUAL CONFERENCE

MAY 7 - 9, 1997

## "WATER: THE TREASURE STATE'S GREATEST TREASURE"

### ~~EXHIBIT REGISTRATION FORM~~

Company Name \_\_\_\_\_

Contact Name \_\_\_\_\_

Mailing Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_

Phone \_\_\_\_\_ Fax \_\_\_\_\_ E-mail \_\_\_\_\_

#### INFORMATION TO BE PRINTED ON NAME TAGS:

No. 1

NAME \_\_\_\_\_

Company \_\_\_\_\_  
\_\_\_\_\_

No. 2

NAME \_\_\_\_\_

Company \_\_\_\_\_  
\_\_\_\_\_

Describe individual exhibit prize donated by your company (if offered and you want prior advertising):

\_\_\_\_\_  
\_\_\_\_\_

Number of exhibit spaces requested \_\_\_\_\_ @ \$250 = \$ \_\_\_\_\_

#### CONFERENCE INFORMATION (please check):

☐ Full Registration \_\_\_\_\_ @ \$100.00 = \$ \_\_\_\_\_

☐ Single Session \_\_\_\_\_ @ \$15.00 = \$ \_\_\_\_\_

☐ Banquet \_\_\_\_\_ @ \$30.00 = \$ \_\_\_\_\_

☐ Luncheon Thursday \_\_\_\_\_ @ \$15.00 = \$ \_\_\_\_\_

☐ Luncheon Friday \_\_\_\_\_ @ \$15.00 = \$ \_\_\_\_\_

PLEASE Make Check Payable to:

MSAWWA & MWEA ANNUAL CONFERENCE

Mail to: MSAWWA / MWEA c/o NorthWood Enterprises  
538 McIVER Road, Great Falls, MT 59404  
406.771.7978 fax: 406.771.1889

Total Amount Remitted = \$ \_\_\_\_\_

All Exhibit Registrations received  
by March 1, 1997, will be printed  
in the conference folders.

## MSAWWA PRESIDENT'S INVITATION

The Small System's Committee of the MSAWWA invites you to join us. We offer several publications (technical as well as general) covering just about anything that a Small System could encounter. We have access to many professionals in the Water Industry. We CAN get an answer to you about problems that you might encounter. Why not give us a try? We are here to serve you whether you are a member or not. Give us your input.

Speaking of input, we give an annual award recognizing the efforts of Small System operators. If you have someone in mind who deserves recognition for their efforts, why not submit their name in nomination for the annual award? Send us the name of the individual and the system he/she operates. Also, include a brief bio on the system and the operator. Send your information to:

MSAWWA Executive Secretary  
NorthWood Enterprises  
538 Melver Road  
Great Falls, MT 59404  
Fax: (406)771-1889

Henry Elbrecht  
MSAWWA Small System Chair  
City of Helena  
316 N. Park Avenue  
Helena, MT 59623  
Fax: (406)447-1568

## WEST YELLOWSTONE





# MWEA PRESIDENT'S MESSAGE

by Dan L. Fraser

Let me start by wishing you all a Happy New Year! It seems like just last week that we were attending the Joint Conference in Missoula. Doesn't time fly when you're having fun? Already another Legislative Session is in progress and the association is scrambling to plan the 1997 Pre-Conference Seminar and the 1997 Joint Conference.

I hope each of you is planning to attend the 1997 Joint Conference. This year, for the first time, we will be holding the conference at the Yellowstone Conference Hotel in West Yellowstone. Dave Schultz, Host Committee Co-chairman, and I have looked over the facilities and they are outstanding. A really fine technical program is in the process of being finalized. Also, a pre-conference seminar of interest to both drinking water and waste water professionals is in the final stages of planning. Be sure and mark May 7 - 9 on your calendar and make your plans to attend both of these events. Try and bring the family. They will appreciate the hotel's facilities and there are a host of activities to be enjoyed and sights to be seen.

Remember the strength and worth of organizations such as ours springs from the talents and efforts of individual members. If you are not currently involved, plan to become involved. Look over the committee lists included in the mailing you received last summer and pick out one or two you'd like to serve on. Notify me (443-4173) or incoming President, Paul Montgomery (441-1140) and we will see you get the committee assignment you want.

Hope to see you in West Yellowstone!



## WEST YELLOWSTONE



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# WATER AND WASTEWATER OPERATOR CERTIFICATION NEWS

*by Shirley Quick, Certification Officer, DEQ*

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## *New Water Study Guides and Exams*

As those of you know who have taken an exam in the past several years, the study materials that you received were informative but did not give a lot of direction on how to proceed to study. The Certification Office, the Drinking Water Program and the Montana Water and Wastewater Operator Advisory Council agreed; therefore, we contracted with a consultant, **Donna Jensen**, and her subcontractor, **Dean Chaussee**, to revise the water study materials and exams.

After a great deal of hard work on their part and a thorough review by the DEQ Field Services Section staff, **Camie Smith** of the Certification Office pulled it all together into "user-friendly" study guides. These guides have been printed and are being sent out to all applicants for the next exam.

The study materials are bound together into an individual guide for each type of examination. When you send in a completed application with the required fees, the Certification Office will send you a copy of the new guide for the examination you are taking.

You may also receive a copy of "Study Material for Well Water Systems," the "1992 Edition of the Circular WQB-1 Montana Department of Environmental Quality Standards for Water Works," and the "Montana Department of Environmental Quality Summary of Drinking Water Regulations for Community Water Supplies," depending on what type of examination you are taking. It will also be required to purchase or borrow a California State University manual to use to study for the Class 1 and Class 2 examinations.

In the past, most of this information was not supplied to you by this office. Although it may seem overwhelming at first to receive all of this information, it will ensure that you have all the necessary information available to you to not only pass the exam but also to be a competent operator.

Please note that the new Class 1B and 2B water treatment examinations will include information on well water systems. This information was added since a Class 1 operator can operate a system classified from 1 on down to 5, Class 2 from 2 to 5,

and so on. Well water system knowledge is necessary to run a Class 3, 4 and 5 well water system.

If you are planning on sending someone to take the exam in March, please make sure they are registered in plenty of time to receive and study from the new study guides. **The last day to register for the March exam is February 28, 1997.** For more information on the study guides and examinations, or to receive information to register for the exam, please call **Shirley Quick** at 406-444-2691.

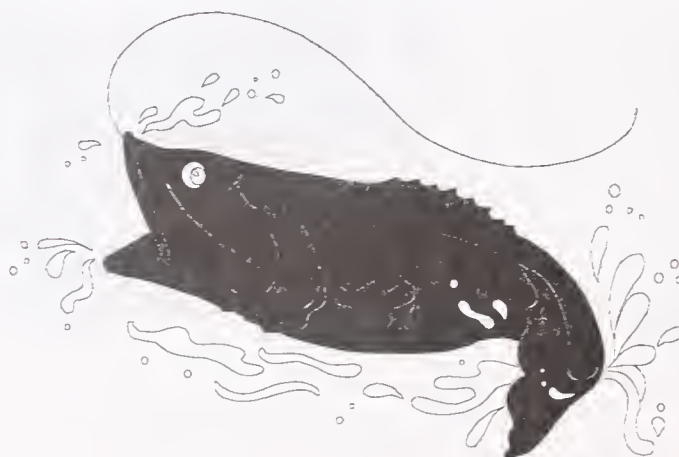
## *Policy on Calculators*

At their meeting on September 12, 1996, the Water and Wastewater Operator Advisory Council approved the following policy for the use of calculators at water and wastewater examinations:

"The Water and Wastewater Operator Advisory Council has determined that calculators may be used during examinations. A calculator is defined by the Council as a piece of equipment used to assist in calculations only. Therefore, the equipment should only have the capability for mathematical manipulation.

In other words, **the only calculators that can be used during water and wastewater examinations are ones that do not have the full alphabet on the keyboard.**"

If you bring a calculator to an exam that does not meet these requirements, a replacement calculator will be available for your use. For more information on the calculator policy, contact **Shirley Quick** at 406-444-2691.





### *Kalispell Small System School and Exams*

Thanks to efforts by the Montana Environmental Training Center and the DEQ water and wastewater training staff, small system operators will have an opportunity to earn their CECs at a **Small Water and Wastewater System Summer Certification School**. The training and tour sessions on July 16 and 17 are offered for small system operators to earn CECs. For more information on this school, contact METC at 454-2728.

The afternoon and evening of July 17 there will be training and math review sessions for operators studying to take their Class 4 or 5 certification exams on Friday morning, July 18. CECs will not be offered for these sessions since they are designed for noncertified operators. Applicants must preregister for this exam with the Certification Office (444-3434) by July 3.

### *Applicant's Responsibility to Determine the Correct Exam to Take*

In order to ensure that you take the correct exam for your type of system AND to ensure that you don't have to take more than one exam, please contact the Certification Office (444-2691) to determine the classification of your system.

When filling out the application to become a certified operator, it is the **applicant's responsibility to determine which classification of exam to take**. Enclosed in the application information is a **Certification Classes table** which itemizes the different classifications.

If you are not sure of your classification size or type, please call the Certification Office and ask how your system is classified in the Public Water Supply inventory system. If our records are not accurate, we can start the process at that time to correct them.

Please note that if you hold an operator-in-training certificate for a higher classification than you operate and would like to become fully certified in the lower classification, contact the Certification Office. If you have enough experience, you can become fully certified without taking another exam.

### **QUICK REMINDERS**

☛ The next exam for all classes of certification will be **Saturday, March 15, 1997**, in Billings, Great Falls, Havre, Helena, Kalispell, Miles City and Missoula. The application deadline for this exam was **February 28, 1997**. However, you can still contact **Camie Smith** at the Certification Office (406-444-3434) to request an application for the next exam.

☛ **Spring water school** will be held in **Billings** from **March 14-15, 1997** with a basic track of training being offered to people registered to take the exam. To receive information on the spring school, contact METC at 406-454-2728.

☛ **Fall water school** will be held from **September 22-25, 1997** in **Bozeman**. The exam will be **September 26**. Don't forget to get your application and exam notice to the Certification Office 15 days in advance.

☛ **No CECs** will be granted for the basic track of training at any water school or pre-exam training for applicants. They are designed for applicants for exams, not certified operators.

**Questions? Contact the Certification Office:**  
**Shirley Quick 444-2691 or Camie Smith 444-3434**

### *More Help at the Certification Office*

If you have called the Certification Office for information in the last year, you have probably received help from **Camie Smith**. Camie started at the Certification Office several years ago as a work study student while attending the Helena College of Technology. We were lucky enough to hire her as a part-time state employee more than a year ago and she is now working almost full-time.

So if you need an application or study materials to take an examination, call Camie at 444-3434. Camie can also answer most certification questions, so don't be afraid to ask for her if Shirley is away from her desk. She has been a great help to the Certification Office and would welcome the opportunity to be helpful to you.



# DEPARTMENT OF ENVIRONMENTAL QUALITY

## PERMITTING & COMPLIANCE DIVISION

METCALF BUILDING

MARC RACICOT, GOVERNOR

1520 E 6TH AVE



# STATE OF MONTANA

(406) 444-2691

FAX (406) 444-1374

PO BOX 200901

HELENA, MONTANA 59620-0901

### CERTIFICATION EXAMINATION NOTICE SATURDAY -- MARCH 15, 1997 -- 9:00 AM TO 1:00 PM

Examinations for certification as a Water and Wastewater Operator will be given at these seven locations:

BILLINGS	Clarion Hotel; 1223 Mullooney Lane; Conference Center (take exit 446 and turn south)
HAVRE	MSU-Northern; Hagener Science Center; Room 103-104
HELENA	Cogswell Building; 1400 Broadway; Room C209 (use south side entrance)
KALISPELL	Kalispell Wastewater Treatment Plant; 2001 Airport Road; Conference Room
GREAT FALLS	METC; MSU - Northern at Great Falls; 1211 NW Bypass; Room 106
MILES CITY	Miles Community College; 2715 Dickinson; Room 106 (main building)
MISSOULA	Ruby's Reserve Street Inn; 4825 N Reserve Street; Room 300

**NOTE, THERE WILL BE NO EXCEPTIONS TO THIS:** By FEBRUARY 28, 1997, as required by ARM 16.18.204, everyone taking examinations must have:

1. completed an application for certification as a water/wastewater operator;
2. paid application (or renewal) fees for fiscal year '97 which ends 6/30/97; and
3. submitted examination registration slips and fees of \$5 per examination.  
(Combination examinations 2A3B, 3A4B, 4AB and 5AB require \$5 examination fee only.)

#### APPLICATION FEES ARE:

\$30 for water (including either or both water distribution or water treatment)

\$30 for wastewater

To request application materials or to ask for additional information, call the certification office at 444-2691 for Shirley Quick or 444-3434 for Camie Smith or write:

**Water/Wastewater Operator Certification**  
**Permitting & Compliance Division - P.O. Box 200901 - Helena 59620-0901**  
**PLEASE KEEP THE UPPER PORTION OF THIS NOTICE**



#### EXAMINATION REGISTRATION SLIP

(To register for an exam, detach and return this slip with appropriate fees by February 28, 1997)

The box marked below is where I will take the examination(s):

<input type="checkbox"/> Billings	<input type="checkbox"/> Havre	<input type="checkbox"/> Helena	<input type="checkbox"/> Kalispell	<input type="checkbox"/> Great Falls	<input type="checkbox"/> Miles City	<input type="checkbox"/> Missoula
		1	2	3	4	5

A - Water Distribution

B - Water Plant

C - Wastewater Plant



# MATH REVIEW FOR CERTIFICATION EXAM

Sponsored By

## *Water & Wastewater Operator Certification Program*

Friday, March 14, 1997

6:30 - 9:30 pm

### GREAT FALLS

MSU - Northern at Great Falls  
1211 NW Bypass  
Room 106



### HAVRE

MSU - Northern  
Hagener Science Center  
Room 103-104

### HELENA

Cogswell Building  
1400 Broadway  
Room C209 (use Broadway entrance)

### MILES CITY


Miles Community College  
2715 Dickinson  
Room 106 (main building)

### MISSOULA

Ruby's Reserve St Inn  
4825 N Reserve St  
Room 300

#### **\*BILLINGS**

**Clarion Hotel  
Conference Center  
1223 Muldowney Lane**

**1:30 to 4:30 pm** 

**(Take exit 446 and turn south)**

#### **\*KALISPELL (Sponsored By MRWS)**

**Kalispell Wastewater Treatment Plant  
Conference Room  
2001 Airport Road**

**6:30 to 9:30 pm**

**(South end of city airport)**

These sessions are intended to review basic math for those people with valid applications for the exam being given on Saturday, March 15. ***You will never learn everything you need to know at a water school to pass the exam OR to be a competent operator.*** The study materials we provide and suggest are designed for self study.

**\*BILLINGS** - At the March 1997 water school in Billings there will be sessions available each day to answer questions you may have from your self study, and to give you an overview of information. Contact the certification office at 406/444-2691 or the Montana Environmental Training Center at 406/454-2728 for more information on the spring water school in Billings.

**\*KALISPELL** - The sessions in Kalispell will be held from March 12 through March 14 and are taught and sponsored by Montana Rural Water Sustems. For more information, contact their office at 406/454-1151.

Since these sessions are designed for entry level operators, ***no CEC's will be given for any of these sessions***, either for the Friday evening sessions or the ones available through MRWS and the Billings water school.

# DON'T FORGET!



## EXAMINATION REMINDERS:

### SUMMER EXAM:

**July 18, 1997** for only Class 4 & 5 operators in Kalispell. This will follow the July 16th & 17th Small Water and Wastewater System Summer Certification School.

### FALL EXAM:

**September 26, 1997** for all classes of operators in Bozeman. This will follow the Fall Water School the of week September 22 - 25.

If you need more information please call Shirley (444-2691) or Camie (444-3434) or write to:

Water & Wastewater Operator Certification  
Permitting & Compliance Division  
PO Box 200901  
Helena MT 59620-0901

PLEASE DETACH AND SEND IN BOTTOM  
WATER & WASTEWATER OPERATOR CERTIFICATION

Send me information on the following exam(s):

☐

**KALISPELL**

July 18, 1997

**BOZEMAN**

September 26, 1997

☐

	4	5
A - Water Distribution	_____	_____
B - Water Plant	_____	_____
C - Wastewater Plant	_____	_____

1	2	3	4	5
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NAME: \_\_\_\_\_ OPERATOR #: \_\_\_\_\_

SYSTEM NAME: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

CITY STATE ZIP: \_\_\_\_\_







# MEMBERSHIP APPLICATION

Dear colleague:

As a professional in the water quality industry, you need to stay aware of the developments in technology and treatment practices. The Water Environment Federation (WEF) has been in the forefront of providing up-to-date information about water quality and our roles in it since 1928. WEF works with the Member Associations to reach its members and enhance their ability to improve water quality nationally and internationally.

The Montana Water Environment Association (MWEA) is your Member Association; it was organized in 1944. By belonging to this group, you can participate in public education forums, contribute to improvement in water quality in Montana, provide networking opportunities for all water quality professionals in the state and region, and grow professionally in your own life. MWEA was instrumental in organizing Emergency Planning programs in several Montana cities, sponsors the premier Montana water quality technical conference annually, publishes this Clearwater semiannually, sponsors infrastructure financing workshops and actively participates in many other activities. These MWEA activities are completely volunteer efforts; probably, because the members recognize the need that these activities are designed to fill.

MWEA has had a Professional Wastewater Operators Division since 1984 to help meet the special needs and interests of the wastewater operators in Montana. This group assists with the certification program, plans events focusing on operator issues, communicates with PWOD groups from other MAs, and undertakes cooperative activities within the MWEA.

The reasonable membership fee in WEF automatically brings you into partnership with other professionals in Montana. The cost is more than recovered through the WEF journals and cost-savings on WEF manuals. WEF publications are nationally recognized as the standard for practices in labwork, plant operation and design, environmental protection, etc. You will benefit from WEF's massive effort to promote safe working practices throughout the industry.

Please contact an MWEA member to find out how you can become a part of one of the world leaders water quality protection and improvement. You may contact me at 444-5337. I have the distinct privilege of serving as MWEA National Director for the next two years.

Sincerely,

Earl William Bahr



## MEMBERSHIP APPLICATION

1997

1

First Name \_\_\_\_\_ M.I. \_\_\_\_\_ Last Name \_\_\_\_\_ (Jr., Sr., etc.) \_\_\_\_\_  
Business Name (if applicable) \_\_\_\_\_ Business Address \_\_\_\_\_ Home Address \_\_\_\_\_  
Street or P.O. Box \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_ Country \_\_\_\_\_  
Home Phone # \_\_\_\_\_ Business Phone # \_\_\_\_\_ FAX# (if applicable) \_\_\_\_\_  
Internet Address (if applicable) \_\_\_\_\_

☐ Check here if renewing

Current WEF ID Number \_\_\_\_\_

\*\* By joining WEF, you also become a member of a local Member Association (MA). Please select the MA you wish to join from reverse side.

Association Choice\*\* **MT** \_\_\_\_\_

2

Please refer to facing page when completing this section.

Employer Code \_\_\_\_/\_\_\_\_/\_\_\_\_ Other (please specify) \_\_\_\_\_ Job Title Code \_\_\_\_/\_\_\_\_/\_\_\_\_ Other (please specify) \_\_\_\_\_

Environmental Focus \_\_\_\_/\_\_\_\_/\_\_\_\_; \_\_\_\_/\_\_\_\_/\_\_\_\_; \_\_\_\_/\_\_\_\_/\_\_\_\_; \_\_\_\_/\_\_\_\_/\_\_\_\_; \_\_\_\_/\_\_\_\_/\_\_\_\_; \_\_\_\_/\_\_\_\_/\_\_\_\_; Other (please specify) \_\_\_\_\_

3

WEF Sponsor Name (optional) \_\_\_\_\_

Sponsor I.D. Number \_\_\_\_\_

Source Code  
for WEF use only

4

**MEMBERSHIP CATEGORIES: Select one only.**

Are you retired? Call the WEF Member Services Center at 1-800-666-0206 to find out about our retired membership category.

**COMPLIMENTARY SUBSCRIPTION**

Select One — NOTE: "\*" subscriptions are already included with membership

**DUES**

(See reverse side)

☐ **Active**

For individuals involved or interested in the advancement of knowledge pertaining to water quality.

☐ **Water Environment & Technology**  
☐ **Water Environment Research**  
☐ **WEF Industrial Wastewater**  
☒ **WEF Highlights\*** (included)

\$  
**82<sup>00</sup>**☐ **Operations Division**

Type of Membership:

☐ Individual ☐ Organization/Agency†

For individuals working in, or responsible for, the operation of one or more wastewater collection, treatment or laboratory facility, or for facilities with a daily flow of &lt; 1 mgd or 40 L/sec.

☐ **Operations Forum**  
☐ **Water Environment Laboratory Solutions**  
☒ **WEF Highlights\*** (included)

\$  
**46<sup>00</sup>**☐ **Student**

For individuals enrolled at least half-time in a college or university. A photocopy of current student ID is required.

☐ **Water Environment & Technology**  
☐ **Water Environment Research**  
☐ **Operations Forum**  
☐ **WEF Industrial Wastewater**  
☒ **WEF Highlights\*** (included)

\$  
**22<sup>00</sup>**☐ **Corporate**

Corporations engaged in the design, construction, operation or management of water quality systems.  
**One person is entitled to receive Membership benefits. Membership is transferable.**

☒ **Water Environment & Technology\*** (included)  
☒ **Water Environment Research\*** (included)  
☒ **WEF Industrial Wastewater\*** (included)  
☒ **Operations Forum\*** (included)  
☒ **WEF Highlights\*** (included)  
☒ **Water Environment Regulation Watch\*** (included)

\$  
**180<sup>00</sup>**

5

☐ **Dual Membership** If you would like to join more than one Member Association, please indicate which association(s) you would like to join and write in the Association's Dual dues (see back of form for prices).**WEF will track no more than three additional associations.** Dual Association(s) \_\_\_\_\_\$  
**5<sup>00</sup>**

6

☐ **Additional Subscriptions**

You may ADD one or more subscriptions to your membership package if they are not already included. Check the appropriate subscription and the corresponding subscription cost.

(NOTE: The prices listed reflect a substantial member discount!)

☐ **Water Environment & Technology**  
☐ **Water Environment Research**  
☐ **WEF Industrial Wastewater**  
☐ **Operations Forum**  
☐ **Water Environment Laboratory Solutions**  
☐ **Water Environment Regulation Watch**  
☐ **Biosolids Technical Bulletin**  
☐ **Watershed & Wet Weather Technical Bulletin**

☐ \$ 40.00  
☐ \$ 40.00  
☐ \$ 40.00  
☐ \$ 25.00  
☐ \$ 35.00  
☐ \$ 35.00  
☐ \$ 89.00  
☐ \$ 89.00

7

**METHOD OF PAYMENT**☐ **Check enclosed** (made payable to WEF)**Charge:** ☐ Visa ☐ American Express ☐ MasterCard

Credit Card Number \_\_\_\_\_ Exp. Date \_\_\_\_\_ Signature \_\_\_\_\_

**TOTAL**

\$

8

**SEND FORM & PAYMENT TO:** Water Environment Federation • Financial Management • 601 Wythe Street, Alexandria, VA 22314-1994 U.S.A.

For more information, call 1-800-666-0206, or if outside U.S. and Canada, call 1-703-684-2452 • FAX: 1-703-684-2492

† One person is entitled to receive membership benefits. Membership is transferable.

**Postage Requirement:** Dues allocated for publications when included in membership: WE&T—\$40; Water Environment Research—\$40; Industrial Wastewater—\$40; WEF Highlights—\$15; Operations Forum—\$25; Water Environment Regulation Watch—\$35; Water Environment Laboratory Solutions—\$35;



# WASTEWATER OPERATOR

## SAFETY BULLETIN!!!!!!

Wastewater operators throughout the nation, and especially small system operators, are being surveyed with regard to safety practices in wastewater collection and treatment systems. In Montana, we are blessed with many small systems that serve our many and widespread small communities. This survey is your chance to participate in a national evaluation of safe work practices.

The staff at the Water Environment Federation (WEF) periodically evaluates the work activities in wastewater treatment systems in order to help identify the various types and severity of workplace hazards. If you've been injured, nearly injured, or never been close to being injured, your input is valuable. Typically, small systems do not belong to the WEF and, as a result, are not very well represented in the survey. This is your chance!

I have gotten permission for you to submit your responses by March 15, 1997, (a month after the deadline), by which time you should have this copy of the Clearwater in your hands. All you have to do is fill out the survey as completely as you can (some sections or questions may not apply), and FAX it to the number listed on the survey form.

I hope that you Montana operators respond to this survey; your input could be important in helping identify the safety needs and concerns of all wastewater operators. Please call me at 444-5337 for any help that I can provide in accomplishing this task. I also encourage all operators to join the WEF Professional Wastewater Operators Division for all the professional expertise that WEF provides to operators. WEF was built by wastewater operators and managers and our future is intertwined with this organization. WEF leads in wastewater research, public education, policy development, professional education, technology development, and many other critical areas of wastewater treatment. Please join us as we strive to improve wastewater treatment in Montana and create more opportunities for professional wastewater operators.

The Water Environment Federation (WEF) Safety & Occupational Health Committee is seeking your input on safety practices in wastewater collection and treatment systems. This survey updates the 1992 survey conducted by the Federation, and the specific information you provide will be reported only as part of aggregated data. Your time and consideration are greatly appreciated.

Name:	Title:
Facility Name:	Telephone:
Mailing Address:	Fax:
State/Province:	E-Mail Address:
Zip/Postal Code:	

I. **GENERAL INFORMATION** - Please provide data for the calendar year 1996, or for your 12 month reporting period which ended in 1996. Report all work-related injuries/illnesses which result in any of the following: Death; One or more lost workdays; Restriction of work or motion; Loss of consciousness; Transfer to another job; Medical treatment (other than first aid); Any work-related illness regardless of severity.

INFORMATION REPORT IS FOR:	NUMBER OF EMPLOYEES	TOTAL EMPLOYEE-HOURS WORKED	TOTAL NUMBER OF WORK-RELATED INJURIES / ILLNESSES FOR 1996	TOTAL NUMBER OF LOST WORK DAYS FOR ALL EMPLOYEES DURING 1996	TOTAL NUMBER OF FATAL CASES FOR 1996	AVERAGE DAILY FLOW (MGD)	POPULATION SERVED
<input type="checkbox"/> Collection System Only <input type="checkbox"/> WWTP Only <input type="checkbox"/> Combined (Collection and WWTP)	<input type="checkbox"/> 1-2 <input type="checkbox"/> 2-5 <input type="checkbox"/> 5-10 <input type="checkbox"/> 10-20 <input type="checkbox"/> 20-50 <input type="checkbox"/> 50-100 <input type="checkbox"/> More than 100	<b>Specify Total Hours Worked:</b> <div></div> (Answer here)	<b>Specify Total Number of Injuries:</b> <div></div> (Answer here)	<b>Specify Total Number of Lost Work Days:</b> <div></div> (Answer here)	<input type="checkbox"/> None <input type="checkbox"/> 1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10 <input type="checkbox"/> More than 10	<input type="checkbox"/> Less than 0.1 mgd <input type="checkbox"/> 0.1 to 1.0 mgd <input type="checkbox"/> 1.0 to 10.0 mgd <input type="checkbox"/> 10.0 to 50 mgd <input type="checkbox"/> 50 to 100 mgd <input type="checkbox"/> Greater than 100 mgd <input type="checkbox"/> Other (specify)	<input type="checkbox"/> Less than 1,000 <input type="checkbox"/> 1,000 to 10,000 <input type="checkbox"/> 10,000 to 100,000 <input type="checkbox"/> 100,000 to 500,000 <input type="checkbox"/> 500,000 to 1 million <input type="checkbox"/> Greater than 1 Million



Name of Person Filling Out Survey:	Facility Name:
Is upper level management active in a safety program?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Is sufficient time devoted to safety?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are adequate funds made available for safety programs and PPE?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are safety inspections held regularly (at least quarterly)?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are safety meetings held regularly (at least monthly)?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Do all levels and classifications of employees participate in meetings?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are training sessions held regularly (at least monthly)?	<input type="checkbox"/> Yes <input type="checkbox"/> No
How many hours did the average employee spend in safety training in the last year?	<input type="checkbox"/> 0-4 <input type="checkbox"/> 4-8 <input type="checkbox"/> 8-12 <input type="checkbox"/> > 12
Do all employees receive all OSHA mandated safety training?	<input type="checkbox"/> Yes <input type="checkbox"/> No If No, What percentage of employees receive training? _____
Is the safety program audited (at least bi-annually) by an outside party?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are there procedures for reporting and timely repair of unsafe conditions?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Do frontline supervisors routinely discuss safety aspects of task assignments?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Does your facility accurately record and investigate all accidents?	<input type="checkbox"/> Yes <input type="checkbox"/> No
How many shifts are worked in an average day?	<input type="checkbox"/> 1 Shift <input type="checkbox"/> 2 Shifts <input type="checkbox"/> 3 Shifts
If you staff 24 hrs/day, does the staff work a rotating shift schedule?	<input type="checkbox"/> Yes <input type="checkbox"/> No
What is the order of rotation?	<input type="checkbox"/> Days to Evenings to Nights <input type="checkbox"/> Days to Nights to Evenings <input type="checkbox"/> Other (specify)
Are there written standard operating procedures for all areas of safety?	<input type="checkbox"/> Yes <input type="checkbox"/> No
If yes, are they reviewed during a new employee's orientation?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are all necessary types of personal protective equipment (PPE) on hand, located where they are mostly likely to be used, and employees are trained in using PPE?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Do you offer incentive bonuses for low accident rates or no lost-time-accidents?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Have these incentives had an effect on accident reporting at your facility?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Is safety a measured performance standard for employees at all levels?	<input type="checkbox"/> Yes <input type="checkbox"/> No

III. ACCIDENT INVESTIGATION DATA - For each injury/illness that occurred in 1996, check the appropriate box. Please use one form for each accident. Copy this form as many times as needed to complete your report.

Name of Person Filling Out Survey:					Facility Name:		
ACCIDENT NUMBER (MINIMUM OF 15 ACCIDENTS)	YEARS WORKED BY INJURED EMPLOYEE	LOCATION WHERE ACCIDENT OCCURRED	PART(S) OF BODY INJURED	TYPE OF INJURY	PRIMARY CAUSE OF ACCIDENT	NUMBER OF LOST TIME (work days)	ACCIDENT PREVENTION (How accident could have been prevented.)
<input type="checkbox"/> 1	<input type="checkbox"/> Less than 1 year	<input type="checkbox"/> Preliminary treatment (screens, grit removal, comminution)	<input type="checkbox"/> Foot	<input type="checkbox"/> Chemical burn	<input type="checkbox"/> Struck by falling or flying object	<input type="checkbox"/> None	<input type="checkbox"/> Follow current workplace safety rules
<input type="checkbox"/> 2	<input type="checkbox"/> 1 year	<input type="checkbox"/> Tanks or settling basins/pits/ponds	<input type="checkbox"/> Leg	<input type="checkbox"/> Thermal burn (fire, electrical, temp.)	<input type="checkbox"/> Struck against stationary or moving object	<input type="checkbox"/> Less than 1 day	<input type="checkbox"/> Use fall protection devices
<input type="checkbox"/> 3	<input type="checkbox"/> 1-2 years	<input type="checkbox"/> Chemical/disinfection equipment	<input type="checkbox"/> Pelvic Region	<input type="checkbox"/> Foreign body	<input type="checkbox"/> Struck by sharp or blunt object	<input type="checkbox"/> 1 day	<input type="checkbox"/> Repair or improve walking surfaces
<input type="checkbox"/> 4	<input type="checkbox"/> 2-3 years	<input type="checkbox"/> Sludge handling equipment (digestors, incinerators, RBCs)	<input type="checkbox"/> Chest (incl. internal organs)	<input type="checkbox"/> Fracture	<input type="checkbox"/> Sprain/strain in lifting pulling or pushing	<input type="checkbox"/> 2-3 days	<input type="checkbox"/> Improve routine maintenance
<input type="checkbox"/> 5	<input type="checkbox"/> 3-4 years	<input type="checkbox"/> Manholes (in and around, incl. traffic sites)	<input type="checkbox"/> Shoulder	<input type="checkbox"/> Irritation (bites, stings, abrasion)	<input type="checkbox"/> Sprains/strains due to awkward position or sudden twist or slip	<input type="checkbox"/> 5 days	<input type="checkbox"/> Place guard or barrier to prevent access
<input type="checkbox"/> 6	<input type="checkbox"/> 4-5 years	<input type="checkbox"/> Pump stations, wet or dry wells	<input type="checkbox"/> Neck	<input type="checkbox"/> Respiratory	<input type="checkbox"/> Falls to different level from platform, ladders stairs, etc.	<input type="checkbox"/> 10 days (2 weeks)	<input type="checkbox"/> Improve housekeeping
<input type="checkbox"/> 7	<input type="checkbox"/> 5-10 years	<input type="checkbox"/> Pipes, valves, overhead fixtures, and similar equipment	<input type="checkbox"/> Face (incl. eyes, nose)	<input type="checkbox"/> Strain	<input type="checkbox"/> Falls on same level to working surface	<input type="checkbox"/> 15 days (3 weeks)	<input type="checkbox"/> Provide better training
<input type="checkbox"/> 8	<input type="checkbox"/> 10-15 years	<input type="checkbox"/> Electrical equipment (motors, generators, junction boxes)	<input type="checkbox"/> Head	<input type="checkbox"/> Wound (serious cuts, bruises, ruptures)	<input type="checkbox"/> Contact with electrical current	<input type="checkbox"/> 20 days (4 weeks)	<input type="checkbox"/> Use of floatation devices
<input type="checkbox"/> 9	<input type="checkbox"/> years	<input type="checkbox"/> Walkways	<input type="checkbox"/> Back	<input type="checkbox"/> Occupational illness	<input type="checkbox"/> Contact with temperature extremes (fire, frostbites, scalding, etc.)	<input type="checkbox"/> 25 days (5 weeks)	<input type="checkbox"/> Other (specify)
<input type="checkbox"/> 10	<input type="checkbox"/> 20 + years	<input type="checkbox"/> Laboratory	<input type="checkbox"/> Arm	<input type="checkbox"/> Death	<input type="checkbox"/> Contact with caustics, toxic or noxious substances	<input type="checkbox"/> 30 days (6 weeks)	
<input type="checkbox"/> 11		<input type="checkbox"/> Off site work-related injury (excavation, construction, service call)	<input type="checkbox"/> Hand	<input type="checkbox"/> Other (specify)	<input type="checkbox"/> Caught in, under, or between object	<input type="checkbox"/> 40 days (8 weeks or 2 months)	
<input type="checkbox"/> 12		<input type="checkbox"/> Motor vehicle (in and around)	<input type="checkbox"/> Whole Body		<input type="checkbox"/> Animal or insect bites	<input type="checkbox"/> 60 days (12 weeks or 3 months)	
<input type="checkbox"/> 13		<input type="checkbox"/> Maintenance shop/yard (welding lathes, milling machines, equipment repair, etc.)			<input type="checkbox"/> Rubbed or abraded	<input type="checkbox"/> 3 to 6 months	
<input type="checkbox"/> 14		<input type="checkbox"/> Other (specify)			<input type="checkbox"/> Occupational illness (vaccination reaction, disease, exposure, stress)	<input type="checkbox"/> 120 days (24 weeks or 6 months)	
<input type="checkbox"/> 15					<input type="checkbox"/> Motor vehicle	<input type="checkbox"/> 6 to 12 months	
					<input type="checkbox"/> Drowning	<input type="checkbox"/> 260 days (52 weeks or 1 year)	
					<input type="checkbox"/> Other (specify)	<input type="checkbox"/> 1-2 years	
						<input type="checkbox"/> 2-5 years	
						<input type="checkbox"/> More than 5 years	
GENERAL COMMENTS:							



# Help Wanted!

## Operator Certification Anniversary!

This year marks the 30th Anniversary of Operator Certification! If you or someone who once worked for your water or wastewater system was one of those first certified under the new law in 1967, please share your experience with Montana's Operators. Please send any pictures of you or your plant that were taken around that time and the same pictures today.

We will print any stories we receive in the 1997 Fall issue of the Big Sky Clearwater ! If you can remember what the early exams were like, what the experience requirements were, or anything of interest about this new certification law, please do a short article about your experience. We know most operators were grandfathered in under the law, but what about those who followed shortly after, or those who hadn't the experience requirements?

## Big Sky Clearwater Early Issues?

DEQ archives have most issues of the Big Sky Clearwater into the mid-70s. We realize that we are missing some of the very first issues. If you have any of these early issues and would like to help us fill out our library, please send us your back issues for the library. If you want to retain your copy, just send us a copy of the issues. If you don't have a way to copy them, we will return your copy after we have duplicated it, whatever is easiest and most comfortable for you. Please give us a helping hand with retrieving copies of these early issues. Thank you!

# **REAUTHORIZATION OF THE SAFE DRINKING WATER ACT (SDWA)**

President Clinton signed Public Law 104-182, the reauthorization of the SDWA, on August 6, 1996. The bill contains many new opportunities and responsibilities for Montana's public water suppliers (PWSs). A detailed summary prepared by the Environmental Protection Agency (EPA) is available upon request from the Public Water Supply Program, Department of Environmental Quality, Box 200901, Helena, MT 59620-0901.

Following is a brief description of the provisions that are expected to have the most significant impacts upon Montana's PWSs:

## **State revolving fund**

EPA is authorized to grant up to \$9.6 billion to states between 1997 and 2003. The funds are to be made available for a wide variety of uses. A separate article on the SRF by Paul Lavigne is in this issue.

## **Small system relief**

Increased flexibility is given to state public water supply programs for PWSs serving less than 10,000 people. This includes new provisions for exemptions, variances, monitoring relief, operator certification (see below), and special treatment technology.

## **Operator Certification**

Operator certification was made mandatory for community and nontransient noncommunity PWSs. Certification is now required for operators of community PWSs, but operators of systems that serve schools and places of business will now also be required to become certified. Significant changes in Montana's present certification program will not likely be required to meet the new requirements. **Funding for reimbursement of expenses for required training was authorized for operators of systems serving less than 3,300 people.**

## **Surface water treatment**

New, more stringent standards for enhanced surface water treatment, disinfection by-products and backwash water treatment must be established by EPA. Minimum criteria for watershed protection to avoid filtration were made more stringent.

## **Groundwater disinfection**

A new groundwater disinfection rule will not be promulgated before 1999. Mandatory disinfection is still possible, but was not required by reauthorization. EPA is considering many options, but the use of information already available to PWSs and state programs will likely be used to make disinfection decisions. Remember that protection of water quality in distribution systems is also



being considered in this rule-making effort, and that disinfection of distribution systems be required in some situations.

## **Standard setting**

The past SDWA requirement for regulating 25 new contaminants every 3 years was removed. Except for microbiological contaminants and disinfection by-products, new standards will be subject to cost/benefit analyses and sound scientific justification. When new standards are proposed, EPA must also consider the potential risk of increasing levels of other contaminants that may result from new treatment requirements. Also, see discussions below for radon and arsenic.

## **Radon**

After conducting a risk assessment and cost/benefit analysis, EPA must set a radon standard by 2000. (The bill did not establish a standard). If the standard results in indoor air concentrations that are lower than levels in outdoor air, state programs or individual PWSs may implement multi-media radon management programs. However, an alternate standard must then still be met by PWSs. Because radon is relatively prevalent in Montana's groundwater, this standard(s) may have a significant impact upon PWSs.

## **Arsenic**

After conducting a risk assessment and cost/benefit analysis, EPA must set a new arsenic standard by 2001. Because arsenic is also quite prevalent in Montana's groundwater, a new standard that is lower than about 20 parts per billion may impose significant treatment costs for many PWSs.

## **Consumer confidence reports**

All community PWSs will be required to issue annual reports to their customers. PWSs serving less than 10,000 may avoid mailing of the reports upon approval by the Governor. Reports must contain information about the system, monitoring, violations and general definitions. Immediate notification for contaminants that may have acute public health effects is still required.

## **Source water protection**

States must implement source water protection programs that identify recharge areas for groundwater and surface water sources. Contaminant monitoring may be reduced for systems that have acceptable source water protection. It is anticipated that Montana's existing wellhead protection and source water waiver programs will satisfy most of the requirements of this new program. PWSs are reminded that substantial state-wide and source-specific waivers are available through DEQ's public water supply program.

If you have questions, or if you should need any other assistance, please do not hesitate to contact Montana's Public Water Supply Program at 406-444-4323, or the Operator Certification Program at 406-444-2691.

## DEMONSTRATION DOLLARS AVAILABLE

The Montana Water Center is currently seeking proposals for projects to demonstrate promising drinking water treatment technologies at pilot or full scale. This will be the third round of demonstrations funded under the Drinking Water Assistance Program, which targets the special needs of small water systems. The program works by teaming university engineers or scientists with the technology vendor, to conduct rigorous, independent testing of new treatment techniques. By providing credible third-party performance data, the program fosters the development of cost-effective treatment techniques to meet the special challenges of small systems.

This year the program especially seeks projects to demonstrate:

- \* alternative disinfection technologies
- \* iron and manganese removal
- \* radon control
- \* removal of DBP precursors
- \* limestone/carbonate contractors for corrosion control
- \* arsenic removal



If you'd like to discuss an idea for a project, please call Program Engineer Gretchen Rupp at 994-1748. To receive a Request for Preproposals, call the Water Center at 994-6690, or visit its Web site:

<http://www.montana.edu/wwwrc>

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## W. E. F. OFFICER TO ATTEND JOINT CONFERENCE!!!

Stanton A. LeSieur, Treasurer for the Water Environment Federation (WEF), will represent the international water quality organization at the annual Montana Water Environment Association (MWEA) conference in West Yellowstone, May 7-9, 1997.

LeSieur is a wastewater operations and management professional from Hillsboro, Oregon, and is responsible for overseeing WEF's \$17 million budget. LeSieur serves as General Manager of the Unified Sewerage Agency in Hillsboro, and has more than 30 years experience in wastewater operations and maintenance in the Western and Pacific Northwest United States.

As a member of WEF since 1967, LeSieur has been active in the Pacific Northwest Pollution Control Association, serving as president and representing the PNPCA on the WEF Board of Control, among his various activities. He has also served in the California Water Environment Association, is a member of the American Water Works Association and the Oregon Association of Clean Water Agencies. He currently sits on the Oregon Department of Environmental Quality Certification Advisory Council and serves as vice chair of the Oregon Department of Education Environmental Services Advisory Committee.



# MONTANA WATER ENVIRONMENT ASSOCIATION MEMBERSHIP DRIVE

**by Dan L. Fraser, Chairman**

The Montana Water Environment Association is again having a competition to encourage members to seek out and sign up water and waste water professionals as new members. In spite of the rumor that our group photograph from the Missoula conference is being considered for the cover of an textbook on abnormal psychology, we know that ours is an organization people should yearn to join--an organization that offers its members a plethora of opportunities to learn new and exciting things.

Therefore, grab yourself a few membership forms and get out there and begin to harangue and harass (the H<sup>2</sup> technique of obtaining members) people who appear to have a yearning. (It is important to note that people often do not recognize their yearning for membership or, when sensed, it is sometimes mistaken for hunger. This makes your job more difficult and challenging.)

As an incentive, we are once again giving away valuable prizes to three lucky new-member-getters. The prizes have not yet been purchased, but they are likely to be three selected from the following list:

1. A 1997 fully loaded Suburban.
2. A two week, all expenses paid, vacation for two in the south of France.
3. Title to a 3 bedroom deluxe condo at Big Sky's Mountain Village.
4. A color TV.
5. A multidisc auto CD changer.
6. A personal stereo.
7. A 35 mm camera.

You'll have to guess which three of the seven options your reliable old Membership Chairman is likely to choose. The rules are the same as always. For each new member, you get your name in the hat. As a trained statistician, I can tell you that the more members you enlist, the better your chances of winning!!!! (It's a complicated theory and you'll have to trust me on this one.) Each person is only eligible to win one prize.

Good luck!

# NEW CORRESPONDENCE COURSE

From

INDIANA STATE UNIVERSITY

*OFFICE OF INDEPENDENT (CORRESPONDENCE) STUDY*

APPROVED BY THE STATE OF MONTANA FOR  
5.0 CONTINUING EDUCATION CREDITS FOR  
WATER AND WASTEWATER OPERATORS

MANAGEMENT AND SUPERVISION FOR WORKING PROFESSIONALS  
COURSE I AND COURSE II

by

Dr. Herman Koren

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## DESCRIPTION

More than 4,000 professionals have gained knowledge and experience from these practical, down-to-earth courses that cover more than 200 topics. Case histories and practical exercises enhance the easy-to-read, self contained materials and lessons. The working water and/or wastewater treatment plant operator is faced with numerous problems related to people and people type situations. These problems are easier to resolve when you learn how to:

- \* Achieve leadership qualities
  - \* Select and manage new employees
  - \* Supervise within the framework of employees' rights and laws
  - \* Handle complaints and avoid grievances
  - \* Plan and organize activities in your department
  - \* Create and maintain a pleasant, safe, and healthy working environment
  - \* Motivate/counsel employees
  - \* Develop schedules for yourself and others
  - \* Communicate effectively with all levels of personnel
  - \* Train new and existing employees
  - \* Take disciplinary action and evaluate its results
  - \* Conduct performance ratings
  - \* Work with unions
- 

## TO ENROLL IN THE MANAGEMENT COURSES CONTACT:

Office of Independent (Correspondence) Study. (Each course enrollment is \$50.00)  
P. O. Box 366  
Indiana State University  
Terre Haute, IN 47808  
1-800-234-1639 Voice Option 2 or Fax: (812)237-3495  
extwarne @ ruby.indstate.edu



# WATER FACILITY SAFETY CONSIDERATIONS

All public water supplies need to have an Emergency Contingency Plan. This plan will spell out what each person will do in an emergency situation. In this article I would like to address general plant safety, core of subjects which all plants should address. Some plants may need more in-depth safety plans than others. Use from this what applies to your circumstance or facility.

## Questions to be answered:

1. Is management involved in developing the Safety Program?
2. Are safety programs presented and/or attended by ALL at least twice a year?
3. Has the operator/management taken steps to identify and remove any safety hazards?
4. Are operators provided a shower and locker for work clothes?
5. Are all operators trained in CPR and first aid?
6. Are hazardous materials updates provided yearly?

## Personal Protective Clothing:

- Hard Hats (for operators and visitors)
- Ear Protection (for high noise areas)
- Goggles
- Gloves (leather and rubber)
- Steel Toed Boots (rubber or leather)

## Safety Devices Available For Use:

- Non-sparking tools (electrical or explosive areas)
- Fire extinguishers readily available
- Oxygen deficiency/explosive gas indicator
- Safety harness
- First aid kits
- Ladders (wooden or fiberglass)

- Traffic control cones
- Safety buoys near ponds or open basins
- Life preservers where needed
- Portable crane or hoist

## General Water Plant Safety:

- Chained railing around open pits
- All pits covered
- Explosion-proof fixtures where needed
- Equipment guards in place
- Dry wells ventilated
- Emergency telephone numbers posted
- Proper flammable liquid storage
- General plant cleanliness
- Trash cans covered
- Enclosed ladders (elevated tanks)
- No-smoking signs
- Chlorine warning signs

## Cross Connection Program: Is there one in place?

- Pump and mixer seals
- Heating boiler systems
- Backflow preventers in place
- Chemical mixer tanks
- Chlorinator water source
- Frost-free hydrants
- Other common sources

## Electrical Safety:

- Trained electrical personnel
- All circuitry enclosed and identified
- Test equipment available & operators trained in its use
- Rubber mats for electrical work

### **Lockout/tagout policy:**

- Warning or caution signs
- Dedicated locks
- Rubber gloves
- Ground fault interrupters used

### **Chlorine Safety:**

- Trained personnel
- Never change a tank alone policy
- 30 minute SCBA located at door to room
- All standing tanks (full & empty) chained to the walls
- Chlorine repair kit readily available
- Leak detection equipment (ammonia)
- No lubricants or paints stored in area
- Room vented to the outside
- Safety precautions posted

### **Process Chemical Safety:**

- Respirator - dust inhalation
- Properly trained to handle ALL chemicals
- Safety clothing - rubber gloves, aprons, and boots
- Compliance with the six "Right-to-Know" laws (P.A. 83-240)
- Emergency Action Plan - in place and operable by all staff

### **Laboratory Safety:**

- Eye wash and shower station present and operable
- All chemicals properly labeled and stored
- Lab safety devices such as pipette suction bulbs

### **Operator-created warning signs?**

- Non-Potable Water
- Chlorine Hazard
- No Smoking
- High Voltage

- "Watch Your Step" in hazardous areas
- "Low Clearance" head knocker
- Exit signs
- Wet floors signs
- Paints, oils, lubricants, and thinners stored away from treatment chemicals and in fireproof cabinets

### **Color-coded pipes?**

- Gray - non-potable water
- Blue - potable water
- Green - oxygen
- Yellow - chlorine gas
- Black - drains



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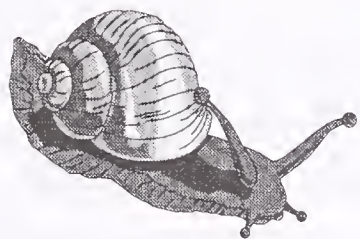
**HAVE YOU DONE YOUR  
PERIODIC SAFETY CHECK?**

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# WELLHEAD PROTECTION NEWS

The most significant news of late has been the re-authorization of the SDWA (finally) with the addition of several new sections relating to a concept called "Source Water Protection". Wellhead protection and now source water protection (SWP) is a logical process or series of steps whereby you identify the source of water to your well or intake structure and then take steps to ensure continued protection of that source water.



U.S. EPA will be developing guidance for states to use in the development of a Source Water Protection Program. Montana will probably begin working on program development after the guidance has been finalized sometime in the fall of 1997.

Individual state SWP programs will likely draw heavily on existing water quality protection activities already in place. The value to PWSs will be in the coordination of these existing activities to ensure continued protection of water used by a PWS for drinking water. It becomes apparent that protecting drinking water is a high priority at U.S. EPA. It certainly makes sense that certified operators should also place high value on protecting their source water.

Requests for information and technical assistance with WHP planning continue to come in to DEQ. Remember, long range planning takes time, and, knowing that, sometimes can be best achieved by picking away at it when you have a little extra time. We encourage you to become familiar with the WHP process so you too can start on protecting your source water. Contact Joe Meek at (406) 444-4806 for information concerning wellhead protection. Remember, Joe is also generally available to come to your area to talk directly to you or your managing entity about WHP. Read on for an example of how WHP plan development can happen.

West Yellowstone decided to take on WHP plan development sometime last fall, so let's look a little closer at WHP and West Yellowstone.



West Yellowstone had insight into the benefits of WHP several years ago when the former mayor participated on the advisory committee charged with development of the Montana Wellhead Protection Program. Greg Johnson, certified operator, also became interested after attending a DEQ-sponsored training which included a segment on WHP. Greg signed up to have additional information sent to the town government.

Ken Davis, superintendent, recognized the value of the WHP concept as described in the information he received from DEQ. Ken contacted Joe Meek at DEQ and arranged a meeting in Bozeman, a middle ground where they could also include land managers from the U.S. Forest Service since the water source is located on USFS property. The first meeting was sufficient to get West Yellowstone on the road to WHP plan development. Ken used the WHP Certification Checklist provided by DEQ as a guide to plan development. Ken recalls, *"the information requested was a little daunting at first because of it's technical nature, but with the help of our operator and the USFS, we were able to put it all together."*

Mark Story of the USFS developed a specific management plan for the delineated zone of contribution area above the spring generally relating to land use practices and resource protection. This covered the contaminant source inventory and management steps of WHP. Ken and Greg worked on compiling a good description of the PWS and WHP effort complete with maps, layout diagrams, and line drawings of the spring collection system. They were fortunate that they already had completed a hydrogeologic assessment of the spring which was appended to the WHP plan to satisfy the delineation step. Finally, deciding how to provide water in a emergency causing the shut-down of the spring was addressed, following a couple of contacts with DEQ, and the first draft of the plan was complete. Ken reports, *"DEQ was quite helpful in meeting with us or responding to phone calls to explain what was needed."*



The final version of the Wellhead Protection Plan for West Yellowstone is now near completion and will likely be certified in the next few months. The potential for obtaining monitoring waivers and possibly dealing with the yet-to-be defined groundwater disinfection rule were driving forces for West Yellowstone. Ken knows that the situation in West Yellowstone is unique when compared with other water sources in that the springs which supply water to the town are located in a remote area adjacent to Yellowstone National Park on land managed by the U.S. Forest Service. But Ken encourages other systems to develop a WHP plan and says, *"I think other systems will benefit from this program...the bottom line is to give our customers the best quality water we can...which wellhead protection will help us accomplish."*

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# WELLHEAD PROTECTION IN MONTANA

TYPE OF PWS	TOTAL POP. SERVED	POP. SERVED USING PWS INVOLVED IN WHP	% OF TOTAL PWS POPULATION
Community PWS	258,000	106,900	41%
Non-transient PWS	34,400	2,500	07%
TOTALS	292,900	109,400	37%

## 1997 SAMPLING REQUIREMENTS FOR PUBLIC WATER SYSTEMS

The accompanying tables list typical monitoring requirements for community water systems serving fewer than 10,000 population. Please note that these tables may not apply if your system has other monitoring requirements due to unfiltered water sources, monitoring failures, organic chemical detects, or maximum contaminant level, lead, copper or trigger level exceedances. New water sources must also be tested for chemicals not listed in the tables.

Most public water systems have the following sampling requirements in 1997:

Bacteriological monthly

One nitrate sample annually for each entry point

One VOC sample annually for each entry point



If you have questions about your sampling requirements, call the following folks at the DEQ Public Water Supply Program:

For questions on bacteriological sampling -- SANDI EWING, 444-5314

For questions on whether we have received your sampling results, computer corrections, entry points -- CHRIS BRISTOW, 444-3744

For questions on nitrate, nitrite, VOC, SOC, IOC and radionuclide sampling requirements -- GARY WIENS, 444-5318, or CRAIG PAGEL, 444-5313

For questions on VOC, SOC and IOC monitoring waivers -- CRAIG PAGEL, 444-5313

For questions on lead and copper sampling -- RICHARD KNATTERUD, 444-4114

If these individuals are not available when you call or if you have any other questions, call the Public Water Supply Program at 444-4323.



PUBLIC WATER SUPPLY SURFACE WATER CHEMICAL MONITORING REQUIREMENTS

COMMUNITY WATER SYSTEMS WITH POPULATION < 10,000

These are the surface water chemical monitoring requirements for community systems serving less than 10,000 population. Note that this table may not apply if your system has other monitoring requirements due to unfiltered water sources, monitoring failures, organic chemical detects, or maximum contaminant level, lead, copper or trigger level exceedances. New water sources must also be tested for chemicals not listed here. Statewide waivers have been granted for EDP, DBCP, Cyanide, Endothall, Diquat, Glyphosate and Dioxin. Only systems with asbestos cement (A/C) pipe in the distribution system are required to test for asbestos. Bacteriological, asbestos, radiological, THM, lead and copper samples are taken in the distribution system; all other chemical samples are taken at each entry point after treatment. All laboratories forward bacteriological results to the Department of Environmental Quality (DEQ). The State Chemistry Laboratory in Helena will also forward chemical analyses other than lead and copper. Those systems that use other laboratories must forward chemical results to the DEQ. To save on the cost of testing ask the laboratory to composite chemical samples whenever possible. Please call the Public Water Supply Program at 406-444-4323 if you have any questions.

CONTAMINANT	1996 THROUGH 1998 - SECOND COMPLIANCE PERIOD			1999 THROUGH 2001 - THIRD COMPLIANCE PERIOD			COMMENTS AND SUGGESTIONS
	1996	1997	1998	1999	2000	2001	
	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY	
MICROBIOLOGICAL	ANNUALLY	ANNUALLY	ANNUALLY	ANNUALLY	ANNUALLY	ANNUALLY	SET UP AUTOMATIC BOTTLE MAILING WITH YOUR LABORATORY. SAMPLE EARLY IN THE MONTH SO YOU HAVE TIME FOR REPEAT SAMPLING IF NECESSARY.
NITRATE	SMALL SYSTEMS BETWEEN 6/1 AND 9/30	SMALL SYSTEMS SAMPLE BETWEEN 6/1 AND 9/30 ONCE DURING THIS THREE-YEAR PERIOD			SMALL SYSTEMS SAMPLE BETWEEN 6/1 AND 9/30 ONCE BEFORE THE END OF 2002		CONTACT YOUR LABORATORY AND ASK FOR A NITRATE SAMPLE BOTTLE EVERY YEAR. ONE ANNUAL SAMPLE IS ADEQUATE UNLESS THE RESULT IS GREATER THAN 5.0 MG/L. IF THIS OCCURS, QUARTERLY SAMPLING MAY BE REQUIRED.
LEAD & COPPER TAP SAMPLES	MEDIUM SYSTEMS SAMPLE BETWEEN 6/1 AND 9/30 ONCE THIS COMPLIANCE PERIOD	MEDIUM SYSTEMS SAMPLE BETWEEN 6/1 AND 9/30 ONCE THIS COMPLIANCE PERIOD					THIS SCHEDULE APPLIES ONLY TO SYSTEMS THAT HAVE QUALIFIED FOR TRIENNIAL MONITORING. SMALL SYSTEMS ARE DEFINED AS LESS THAN 3300 POPULATION; MEDIUM SYSTEMS ARE LESS THAN 10,000. CONTACT YOUR LABORATORY AND ASK FOR LEAD AND COPPER SAMPLE BOTTLES EARLY EACH PERIOD. BE SURE YOU SEND A COPY OF THE TEST RESULTS, ALONG WITH THE LEAD AND COPPER MONITORING FORM, TO OEO.
PHASE II & V SOCs, PESTICIDES & HERBICIDES	COMPLETE ONE SET THIS COMPLIANCE PERIOD			COMPLETE ONE SET THIS COMPLIANCE PERIOD			THESE CHEMICALS ARE ORGANIC CHEMICALS REQUIRED UNDER THE PHASE II & V RULES. AFTER THE INITIAL SET ONE SAMPLE IS REQUIRED EVERY THREE YEARS IF THERE ARE NO DETECTS.
PHASE II & V VOCs	ONE VOC TEST ANNUALLY	ONE VOC TEST ANNUALLY	ONE VOC TEST ANNUALLY	ONE VOC TEST ANNUALLY	ONE VOC TEST ANNUALLY	ONE VOC TEST ANNUALLY	THESE CHEMICALS ARE ORGANIC CHEMICALS REQUIRED UNDER THE PHASE II & V RULES. GROUNDWATER SYSTEMS ARE ELIGIBLE FOR REDUCED MONITORING AFTER THREE ANNUAL SAMPLES ONLY IF THERE ARE NO PREVIOUS DETECTS.
PHASE II & V INORGANICS INCLUDING ARSENIC	ANNUALLY	ANNUALLY	ANNUALLY	ANNUALLY	ANNUALLY	ANNUALLY	INORGANIC CHEMICAL WAIVERS MAY BE REQUESTED AFTER THREE ROUNDS OF SAMPLING. SEND A WRITTEN REQUEST TO CRAIG PAGEL, PUBLIC WATER SUPPLY PROGRAM, DEPARTMENT OF ENVIRONMENTAL QUALITY, PO BOX 200901, HELENA MT 59620-0901.
RADIONUCLIDES	RADIONUCLIDES ONCE EVERY 4 YEARS (CHECK YOUR RECORDS TO SEE WHEN YOU LAST SAMPLED)						RADIONUCLIDES ARE REQUIRED ONCE EVERY FOUR YEARS. CHECK THE DATE OF YOUR LAST ANALYSIS. CALL ENERGY LABORATORIES AT 800-735-4489 OR INTER-MOUNTAIN LABORATORIES AT 800-828-1413 FOR A SAMPLE BOTTLE.



# PUBLIC WATER SUPPLY GROUNDWATER CHEMICAL MONITORING REQUIREMENTS

COMMUNITY WATER SYSTEMS WITH POPULATION < 10,000

These are the groundwater chemical monitoring requirements for community systems serving less than 10,000 population. Note that this table may not apply if your system has other monitoring requirements due to unfiltered water sources, monitoring failures, organic chemical detects, or maximum contaminant level, lead, copper or trigger level exceedances. New water sources must also be tested for chemicals not listed here. Statewide waivers have been granted for EDP, DBCP, Cyanide, Endothall, Diquat, Glyphosate and Dioxin. Only systems with asbestos cement (A/C) pipe in the distribution system are required to test for asbestos. Bacteriological, asbestos, radiological, THM, lead and copper samples are taken in the distribution system; all other chemical samples are taken at each entry point after treatment. All laboratories forward bacteriological results to the Department of Environmental Quality (DEQ). The State Chemistry Laboratory in Helena will also forward chemical analyses other than lead and copper. Those systems that use other laboratories must forward chemical results to the DEQ. To save on the cost of testing ask the laboratory to composite chemical samples whenever possible. Please call the Public Water Supply Program at 406-444-4323 if you have any questions.

CONTAMINANT	1996 THROUGH 1998 - SECOND COMPLIANCE PERIOD				1999 THROUGH 2001 - THIRD COMPLIANCE PERIOD				COMMENTS AND SUGGESTIONS				
	1996		1997		1998		1999			2000		2001	
	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY	MONTHLY		MONTHLY	MONTHLY	MONTHLY	
MICROBIOLOGICAL													SET UP AUTOMATIC BOTTLE MAILING WITH YOUR LABORATORY. SAMPLE EARLY IN THE MONTH SO YOU HAVE TIME FOR REPEAT SAMPLING IF NECESSARY.
NITRATE													CONTACT YOUR LABORATORY AND ASK FOR A NITRATE SAMPLE BOTTLE EVERY YEAR. ONE ANNUAL SAMPLE IS ADEQUATE UNLESS THE RESULT IS GREATER THAN 5.0 MG/L. IF THIS OCCURS, QUARTERLY SAMPLING MAY BE REQUIRED.
LEAD & COPPER TAP SAMPLES													THIS SCHEDULE APPLIES ONLY TO SYSTEMS THAT HAVE QUALIFIED FOR TRIENNIAL MONITORING. SMALL SYSTEMS ARE DEFINED AS LESS THAN 3300 POPULATION; MEDIUM SYSTEMS ARE LESS THAN 10,000. CONTACT YOUR LABORATORY AND ASK FOR LEAD AND COPPER SAMPLE BOTTLES EARLY EACH PERIOD. BE SURE YOU SEND A COPY OF THE TEST RESULTS, ALONG WITH THE LEAD AND COPPER MONITORING FORM, TO DLO.
PHASE II & V SOCs, PESTICIDES & HERBICIDES													THESE CHEMICALS ARE ORGANIC CHEMICALS REQUIRED UNDER THE PHASE II & V RULES. AFTER THE INITIAL SET ONE SAMPLE IS REQUIRED EVERY THREE YEARS IF THERE ARE NO DETECTS.
PHASE II & V VOCs													THESE CHEMICALS ARE ORGANIC CHEMICALS REQUIRED UNDER THE PHASE II & V RULES. GROUNDWATER SYSTEMS ARE ELIGIBLE FOR REDUCED MONITORING AFTER THREE ANNUAL SAMPLES ONLY IF THERE ARE NO PREVIOUS DETECTS.
PHASE II & V INORGANICS INCLUDING ARSENIC													INORGANIC CHEMICAL WAIVERS MAY BE REQUESTED AFTER THREE ROUNDS OF SAMPLING. SEND A WRITTEN REQUEST TO CRAIG PAGEL, PUBLIC WATER SUPPLY PROGRAM, DEPARTMENT OF ENVIRONMENTAL QUALITY, PO BOX 200901, HELENA MT 59620 0901.
RADIONUCLIDES													RADIONUCLIDES ARE REQUIRED ONCE EVERY FOUR YEARS. CHECK THE DATE OF YOUR LAST ANALYSIS. CALL ENERGY LABORATORIES AT 800 735 4489 OR INTER-MOUNTAIN LABORATORIES AT 800-828-1413 FOR A SAMPLE BOTTLE.



# CLEARWELL MODIFICATIONS

by John Camden, Water Quality Specialist

Since the implementation of the Surface Water Treatment Rule (SWTR) at the end of June 1993, several of Montana's surface water filtration plants have made clearwell or other improvements to meet the contact disinfection requirements. This portion of the rule is known as "Contact Time" (CT) so filtration plants can meet 3-log inactivation of Giardia cysts and 4-log inactivation of viruses. Filtration plants that meet the 3-log inactivation of giardia can easily meet the 4-log inactivation for viruses.

Filtration plants that had to make improvements range from the City of Great Falls to the Pines Youth Camp on Fort Peck Lake. Several communities are still looking at major improvements to their clear wells. The following is a list of improvements made to Montana's filtration systems.

City of Billings - Completed a tracer study to determine T-10 under certain flow conditions.

City of Butte - Provided contact chambers on the Basin Creek supply to the first service connections. In addition, two new treatment plants were built to meet the SWTR.

City of Chinook - Retained an engineering firm to address improvements to the existing clearwell, filtration plant, and a master water plan.

City of Conrad - Retained an engineering firm to determine flows from the 12 & 16-inch pipelines leaving the filtration plant. The city crew installed two flow metering vaults and chart recorders to calculate CT. They also installed a larger pipeline from the distribution line to the first service connection to meet CT.

City of Forsyth - Retained an engineering firm to address improvements to the existing clearwell and were also involved with the Water Resource Center and MSU in design improvements to the existing clearwell. Forsyth contracted to have serpentine baffles added to the clearwell and also made design changes to the existing pipeline. Tracer testing will be completed this spring or summer.

City of Great Falls - Retained an engineering firm to address improvements to the existing clearwell. The City of Great Falls contracted to have serpentine baffles installed in the clearwell. This increased the baffling factor and increased the Inactivation Ratio.

City of Hardin - Retained an engineering firm to address improvements to the clearwell. Hardin contracted to have an additional clearwell added to the filtration plant.

City of Laurel - Hired an engineering firm to address improvements to the existing storage reservoirs, filtration plant, and design a clearwell to the filtration plant to meet CTs. Construction should begin this spring.

Lockwood Water Users Association - Retained an engineering firm to perform tracer testing. Testing resulted in a greater T-10 value being added to the baffling factor. This was done under low-flow conditions. Additional testing will be done this summer under high-flow conditions.

City of Philipsburg - Retained an engineering firm to address improvements to the existing water system to meet conditions to "Avoid Filtration." A baffled curtain was installed in the circular reservoir tank. Currently the city is looking at groundwater options.

Pines Youth Camp - Submitted plans to treat surface water. This included filtration, monitoring controls, and a baffled storage tank.

Yellowtail Dam - Submitted plans to increase the pipe size and length in the filtration plant to meet CT. The filtration plant is situated inside the power plant.

If there are any questions concerning disinfection to meet the SWTR, please give us a call. Our new program number is 406-444-4323. Ask for the Public Water Supply Program

# Advanced Surface Water Treatment Training!

## *Optimizing Your Filtration and Crypto Facts Relating To Your Plant!*

Recently released data from the Center for Disease Control (CDC) indicates that the risk of *Cryptosporidium* in public drinking water is much higher than earlier suspected. Most surface water plants which meet the state and federal laws have been found to have Crypto in their source water.

Six well-documented outbreaks of cryptosporidiosis attributed to drinking water supplies have been documented in the United States. The scary part is the source of drinking water used by utilities in these outbreaks included surface water (lakes, rivers, streams), well water, and spring water.

It was also interesting to note that swimming pools, water park wave pools, and water slides had been identified as the origin in other cases.

There is also considerable circumstantial evidence that low-level (non-epidemic) transmission is occurring through drinking water in the United States. Oocyst have been found in 65-97% of surface waters investigated (20-23 sources). Because *Cryptosporidium* species are highly resistant to chemical disinfectants used in the treatment of drinking water, physical removal by filtration is the most important component of the multi-barrier concept. The multi-barrier concept includes coagulation, flocculation, filtration, and disinfection.

Be aware, though, that a filtration plant, especially one that is not well maintained and operated, may not afford absolute protection. All waterborne outbreaks documented to date have occurred where utilities met all current state and federal regulations for acceptable quality of drinking water. In all three of the cases with sources that utilized surface water supplies, a filtration system had been used. This indicates that just meeting the state and federal regulations might not be adequate to protect citizens from this waterborne disease. To go even further, studies of these utilities indicated that Oocyst were present in tap water in 37% of the communities evaluated. The only edge to insure that your utility is getting the best removal is to utilize the four barriers to their maximum efficiency. If you operate and maintain your system with a very high degree of excellence, fully utilize your flocculation /sedimentation adequately, nail the final filtered turbidity at 0.1 NTU or below, and meet Ct's; you have a better chance than those who do not.

To learn more about operating your plant to maximum optimization, plan on attending one of the Advanced Surface Water Treatment Seminars this spring. Contact METC (454-2728) or check your Training Calendar for the class near you.

by Rick Cottingham,  
Water Quality Specialist



**This publication welcomes articles of interest and random pieces of information regarding anything to do with water, water treatment, or wastewater treatment. If you have ideas or information you would like to share with other people involved in the water or wastewater field, please contact the Department of Environmental Quality.**

**An article may consist of your thoughts and ideas about something you have experienced or perhaps information that might help someone else in their day-to-day work. It could also be a technical article developed from research information and library resource materials. If it has to do with these areas and you think it may be of interest, please send it to us (Attn: Editor) or give Bill Bahr or Rick Cottingham a call at 444-4454.**

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